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TO IMPROVE THE SOIL AND THE MIND.

[SERIES.

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J. J. THOMAS, ASSOCIATE EDITOR, UNION SPRINGS, N. Y.

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The Cultivator & Country Gentleman.

Home Investments—Under-Draining.

Among Farm processes to which it is just now particularly appropriate to call the attention of our readers, we must give a prominent place to UNDER-DRAINING. Many of them are placed in the possession of an unusually good balance at the bank, arising from the high prices commanded by their produce. What we wish to suggest is, whether it may not be the part of wisdom to invest any surplus of the kind in the improvement of the farm itself, rather than in outside ventures?

A prudent man in seeking an investment, looks to two objects, the certainty of an annual income from his money, and the ultimate safety of the amount invested. Now, on lands requiring Drainage, we should be blind to the testimony of all who have tested it fairly, to doubt that the return it yields will be an ample interest on its cost. And while there may be cases in which a whole farm, thoroughly drained, would not at once sell in market at a price enough higher to make up for the outlay, there are, on the other hand, innumerable instances in which fields otherwise valueless, have been rendered superior to any other part of a large area by judicious draining; and we must be permitted to doubt whether in any case, this operation well performed, and taken as the basis of a thorough and systematic course of Farm improvement, would not eventually, and in connection with the careful saving of the manures of the farm, add sufficiently to its value to render the principal of the investment required quite as secure, as the interest would be regular and certain. Let those who possess the back volumes of the COUNTRY GENTLEMAN and THE CULTIVATOR, "overhaul the same," as Capt. Cuttle would say, for the experience of our old friend and correspondent, JOHN JOHNSTON, and the many others who have written on the subject in these columns, in times past; and "when found, make a note" of the pecuniary results attained.

After visiting, last autumn, the farm owned and occu-

pied by SAMUEL FAILE, Esq., at White Plains, Westchester Co., we promised to give at greater length, some notes of the improvements there carried out; and we proceed to refer to them at this time, in so far as they bear upon the subject at our head, as furnishing strong testimony in favor of the statements above given. "Ridge Farm," as it is called, was purchased just three years ago, (April 1, 1860,) when its condition is described as possessing features in common with too many of the "worn down" farms in the older parts of the State—much of the land classed as arable, (124 acres,) being over-run with moss and briars, and including, beside 43 acres of wood-land proper, a surface of 126 acres entirely unreclaimed, and a portion of it swamps. This is land, it should be borne in mind, the position of which alone is enough to place its valuation at a high figure—every acre of which must pay the tax levied on that valuation, and either sink or bring in, as the case might be, the interest upon the sum for which it would sell.

Mr. FAILE's first trial of Underdraining was a field of about 5 acres, a side-hill, which, notwithstanding its slope, was rendered so wet by springs as to be inaccessible to teams until a season too advanced to admit of its cultivation. It was thus occupied only by a coarse grass, and could scarcely be considered as contributing at all to the income of the farm. If what it yielded did not at least pay the taxes, this field was a source of absolute loss, as well as being an entirely unproductive investment. It was tile drained at a depth of three feet, and at intervals of thirty feet; plowed, subsoiled and seeded with Timothy alone, Clover being sown early in the spring of 1861. One winter's outflow from the tiles with which it was underlaid, rendered it as firm and dry as any land on the farm; the first hay crop yielded from it averaged considerably more than two tons to the acre. A ton of hay in Westchester county is somewhat more valuable than in the interior of the State; and allowing even one-half the crop to go for the immediate cost of seeding and harvesting, we should venture to say, without knowing exactly the cost of the improvement, that the other ton would pay the interest upon it, and contribute a fair dividend toward a sinking fund for the repayment of the principal.

The second piece of land undertaken was a swamp of about seven acres, composing about one-half field No. 19, and devoted previously to the production of bog-grass, briars, and stagnant pools. The whole 7 acres we were told, (and fully credited the statement,) would not have carried a single cow through the season. In the autumn of 1861, drains were laid converging from the eastern and a part of the southern side, toward the center, where a pond was walled in as a reservoir of the drainage water.

A part of the field toward the western line, had been plowed when we visited the place in the autumn of 1861, and we could judge from its appearance what a task must have been undergone in the plowing of the remainder, which was not done until the spring of 1862. Corn was planted, manured in the hill with poudrette simply, and the result last autumn was "a crop of 53 bushels of shelled corn per acre," we are now informed, "with the gratification of finding the roots and briars almost eradicated, and a rich bed of dark loam dry and loose, ready for cultivation." With corn quoted at from 80 cents to \$1 per bushel, as it has been since this crop was harvested, we leave the reader to compute the interest yielded in this case by an investment in "underground crockery."

The third field which we examined last November, contained along its eastern side about nine acres, originally similar to the foregoing. Here the tile were laid at a depth of three and a half feet, and thirty feet apart, but the work was not completed until the middle of June—too late for a crop. It was plowed during the summer, harrowed, and in October again plowed to permit the fullest action of the winter's frost. No standing water was to be seen at the time of our visit, which was during a tolerably heavy shower, and the water was coming from all the tile in copious streams.

We thus found 21 acres converted from an almost or entirely worthless surface, and added, by the use of tile, to the arable area of the farm. By proper cultivation and the use of guano and bone-dust, much had been done meantime to renovate the surface above noted as arable at the time the farm was purchased. This we pass by as foreign to our present object; but, as a farther example of the thorough-going manner in which everything has been undertaken and carried out, it may be added that the old, crooked and tumble-down division fences have been removed, and replaced, up to the opening of this year, by *six miles and a quarter* of new and heavy stone wall, thus securing convenient fields, of good size and straight enclosures, and at the same time a thorough removal of the surface stone which before encumbered them. Moreover, much draining has been done beside the three examples here selected as especially worthy of notice.

Now, on how many farms is it the case that a few acres which have always been quite or nearly useless, if not an offensive eyesore, may be converted by a few lines of Drain, into the most fertile and serviceable fields! Of all kinds of Draining, that accomplished by means of tile deserves the preference; and at the risk of repeating what has often been said before, we shall recapitulate some of the grounds of this preference:

1. The only other mode which competes with Tile-draining in the first of all requisites, *durability*, is that done with stone. This requires much more labor both in the digging of a ditch wide enough to lay the stone properly, and in the putting in of the drain itself. Judge FRENCH asserts that where tile can be had at reasonable cost, the expense involved is *not more than one-half* that of stone drains.

2. Tile-draining, well performed, is the most durable, because there is less opportunity for vermin to find their way into them; they form a smooth channel for the water, with nothing that should retard its flow and occasion the collection of silt, and, in digging the ditch for them of just the proper width for the purpose, the surrounding soil below and on each side, is not disturbed and loosened

up in such a way as to render it likely that the water that ought to run through them will force a passage for itself elsewhere, undermining and breaking the continuity of the drain.

3. Pipe-tile, which experience in Great Britain and in this country, has proved far preferable to the other forms once in general use, convey a very large amount of water in proportion to the space they occupy, while a small amount creates more of a current than it would possess upon a flat-bottomed channel of any sort,—rendering deposits less likely,—and the round ends of the tile can moreover be so adjusted as to secure a close fit, and leave room for very little obstruction and friction from intruding angles or joints.

This leads us to refer to one point in Mr. FAILE'S Draining practice which he considers of no little importance. The branch or lateral drains are frequently brought into the mains at an angle of nearly or quite ninety degrees, thus leaving room, in the abrupt change of course which the current must take, either for a sluggish outflow where the quantity of water is small, or for undue pressure against the opposite side of the main if the drains are running full. The main objection is that any abrupt angle, by diminishing the velocity of the stream actually lessens the capacity of the drain. This is obviated by changing the course of the branch drains a short distance above the main, so that the two streams shall be flowing as nearly as possible in the same direction where they unite. For some other facts in Mr. FAILE'S practice, the reader is referred to page 384 of the last vol. of the *Co. GENT.*

The only objection that can arise at the present time to the undertaking of Farm-drainage, is the high cost of labor in almost all parts of the country. For this reason we have not urged the drainage of *large surfaces*—our purpose having been to suggest attention mainly to those cases in which, by the cutting off of springs or of surface water from above, a comparatively limited amount of drainage will accomplish a great deal. There are such spots, we might almost say, on a large majority of farms,—the removal of which their owners may have often thought of, but never mustered the courage and enterprise to accomplish. Was there ever a better time to do it than the present, if the money is on hand for the purpose, and when the prospect of good returns for the increase of crop obtained is so encouraging?

TO MAKE POTATO STARCH.

Starch made from the common potato furnishes an excellent substitute for arrowroot, as a wholesome, nutritious food for infants. It also makes a good cheap pudding for the table, if cooked like sago; and as it has not the medical properties of arrowroot, it is much to be preferred as an article of daily food, except for children who are subject to diarrhoea or summer complaint. The process of making the starch is simple, and the time required so short as to put it into the power of every one having the means at hand. Wash any quantity of potatoes perfectly clean, and grate them into a tub half full of clean cold water; stir it up well; let it settle, and then pour off the foul water; put the grated potatoes into a fine wire or coarse hair sieve; plunge it into another tub-full of clean cold water, and wash the starch through the meshes of the sieve and throw the residue away; or wash it again if any starch remains in the pumice; let it settle again, and repeat this process until the water comes off clear; scrape from the top any remains of the pumice; then take the starch out, put it on dishes to dry in a warm room, and it will be fit for use immediately. When wanted for use, mix as much as may be needed in cold water, and stir it into boiling milk, or water if preferred, and it requires no further cooking. It also makes a stiff and beautiful starch for clearing thin muslins and laces.

Sudden Changes in Farm Cultivation

In conversation last week with an extensive and experienced Tobacco grower from the Connecticut Valley, he made the remark that he had never known farmers attempt its culture, who did not get something wrong in the harvesting or curing of the first crop,—these processes requiring much practice and care to perform them rightly. He added, however, that when there is a great demand for the article, poorly cured samples may go off at as good prices as good Tobacco in ordinary times.

Corroborating the views expressed by this cultivator, a letter has since reached us from another Tobacco grower in Massachusetts, who gives the following sensible words of caution:

"I see a good many inquiries for the mode of culture of Tobacco. I hope people will not go crazy because the article brings a high price now. It is quite a trade to learn to cultivate tobacco, and by the time beginners get buildings and poles in readiness, it will be down in price."

It is a peculiarity of American farming, we believe, that we are so spasmodically ready to undertake new enterprises of every sort. A few acres put under a crop of Tobacco may be worth the trial, now, for those who happen to have land adapted to the purpose; and it is possible, therefore, that this is an exception to the remark which it has occurred to us more than once to bring to the notice of our readers, as peculiarly applicable to the present times—namely, that, as a general rule, that farmer is most successful who studies the peculiarities of his own soil and situation until he decides upon a system of culture and a series of crops precisely adapted to them, and then follows that system steadfastly for a course of years. It is this which gives its fixed character and general success to the Agriculture of Great Britain. Minor changes are of course admitted from time to time. But, as a general rule, there is a certain amount of grain raised, according to a well defined rotation, and a certain amount of stock fed upon the roots and grass grown and the feed to be purchased, on every farm, from year to year; and if the prices of grain or of meat are now and then high or low, the system is not interfered with—the average returns of one season with another, being kept in view as an object of far greater importance than temporary gain, which may be uncertain, and is often followed by counterbalancing losses. In the condition of our markets for Agricultural produce, just now, there will doubtless be many who are tempted to undertake both Wool-growing and Dairying upon a scale of unusual magnitude. Every one is aware of the anxiety that has been shown to procure fine wooled sheep for many months past; and we see it stated that large additions are making to Dairy stock in many parts of this State—for example, that in the county of Chautauqua not less than one thousand cows have lately been received, chiefly from Pennsylvania. Now the close of the war, whenever that much-to-be-desired event shall occur, may catch many a farmer as well as a multitude of speculators in a tight place (as a sensible article in the New-York Argus last week has suggested)—owing to the diminished demand for wools when the cotton market is reopened and soldiers by hundreds of thousands are no longer to be clothed, and to the diminished exportation of dairy products when the premium on exchange goes down. And the letter from our Massachusetts correspondent, above quoted, goes on to say:

"I hope your readers will bear in mind that Grain of

all kinds will be high for a year or more to come. Not long since I heard a gentleman of note remark, 'that wages were going to be so high he should not hire much, and consequently not plant much, and do as little farming as he could.' This did not meet my views, for if wages are high, farm produce will be correspondingly high, and farmers should pull every string and leave no stone unturned, but should try to raise all they possibly can; for there never will be a better time for them to get out of debt than while the war lasts."

To this end we have no doubt that Grain raising farmers, (as, indeed, we have always urged,) may profitably combine greater attention to stock with the main object of their farms; and that, with proper attention to their land and its productiveness, stock raising and dairy farmers may profitably increase the quantity of stock their farms have carried. But it certainly strikes us as quite imprudent to make sudden changes involving the whole system of management heretofore adopted, in the hope of avoiding the necessity of heavy payments for farm labor, or of profiting by the present but uncertain rates which particular products are bringing. The great staples of the farm, if the war continues—wheat and Indian corn and barley, as well as butter and cheese and wool—are certain to bring high prices; and when the war is over, unless Providence should favor the whole country with seasons of unexampled productiveness, the force of farm labor has been so greatly lessened, that we see no chance for the leading kinds of Grain to fall, as other products may, below a rate amply remunerative for their cost.

It has been already noted from time to time in the COUNTRY GENTLEMAN, how vastly our exportations of Wheat have exceeded the calculations of some of our English friends, who, instead of consulting trustworthy sources of information, argued from prejudiced reports, or on the principle that "the wish is father to the thought," that America could send them no grain from and after the very outset of the war. Whether the war shall continue or not, we mean to keep up our supplies for export,—it is of vast importance to the financial condition of the country and the prosperity of every class of citizens that we should;—and, appreciating the importance of this end, not less than of the existence of abundance for our home consumption, we trust, in the language of our correspondent, that our farmers will prepare for a busy campaign during the coming spring and summer, and "leave no stone unturned to raise all they possibly can."

WHY HENS DO NOT LAY.

MESSRS. EDITORS—I am not in the habit of writing for publications, but as I have a few remarks to make from my experience, and think it will be of some use to your numerous readers, I will make that experience public. Last spring I had sixteen hens of the Dorking breed, and they did not lay. I did all in my power to make them lay, but nothing effected a cure. I gave a great variety of feed, burnt bones, shells, &c.; also tried many things recommended in your valuable paper to make hens lay, but all was of no use. I did not like to part with them, as they were favorite fowls of mine, and highly esteemed for the breed. Lastly I gave up in despair—thought there was no use of keeping hens to look at, and receive no profit. I then commenced to kill them, took the poorest first, and dressed one, and it was the fattest fowl I ever saw, and no signs of any eggs.

I then made up my mind they were too fat to lay, and then commenced immediately to starve them a little, which caused them to lose some of their flesh, and in due time they commenced to lay. Since then they have done well. Was it feeding too high that caused their not laying? Will some of your readers please give their opinion in your next paper. Cape Vincent, April 1st, 1863.

E. C. K.

The True Cause of the Potato Disease.*

BY PROF. S. W. JOHNSON.

Having given an account of the potato fungus, *Peronospora infestans*, and described the experiments and observations which have been adduced as evidences that it is the cause and not a result of the potato rot, we may now turn our attention to an important question that presents itself, viz: How is the existence of the fungus continued from year to year? This point appears to have been thoroughly investigated by Dr. De Barry. He describes at length the researches which conduct him to the following results: 1st. The spores or seeds of the fungus cannot survive the winter, either on the dry potato top or in the soil. 2d. The *Peronospora infestans* is not developed from the spores of any other form of fungus. It happens that some fungi are propagated by two or more distinct kinds of spores, some of which may be kept in the dry state indefinitely, without losing their vitality. It was hence necessary to examine most carefully the habits and development of all the fungi which usually occur on potatoes. The result of such study is that none of them have any generic connection with the potato fungus. This feeds upon the sound potato, the others feed upon the decayed potato. 3d. The *Peronospora infestans* winters in the tuber in the condition of mycelium,† and is carried into the field in seed potatoes. We have not space here to detail the evidence in favor of these conclusions, but must refer to De Barry's work. With regard to the last, however, it may be remarked that there are two methods by which the fungus that is contained in the seed potato may propagate after the latter is planted, and thus from a single infected tuber may devastate a whole field or neighborhood:

1st. As has been described in the previous article, the potato containing the mycelium (fungus without seed or spores) in its interior, if cut or bitten so that the cuticle is injured over the diseased part, shortly produces, under favorable conditions of moisture and warmth, spore-bearing branches, which multiply and produce new fungi. In a stiff soil, at a considerable depth, and in case of uncut or unwounded tubers, this kind of propagation by spores does not take place.

2d. The mycelium which has lain dormant in the tuber during the winter, and has perhaps developed in it to so slight a degree as to escape ordinary observation entirely, grows in the planted tuber, follows the young shoots in their extension, and with them passes out of the soil. When the mycelium enters a young shoot in large quantity, the latter shortly becomes black and dead. Such shoots may often be observed when diseased tubers are allowed to sprout. On the contrary, if the mycelium is not abundant, the shoot preserves its beautiful appearance externally, and grows without any perceptible drawback, although on microscopic examination the mycelium may be found, as well as the discolored track of disorganized tissue through which it has made its way.

Considering the facts stated in our previous article, it is evident that proof being given that the mycelium may survive winter in the tubers, from them penetrates the shoots and thus get above the soil, it must be admitted as a consequence, that a few diseased seed potatoes may infect a whole field more or less widely, according as the conditions of increase and distribution are favorable or otherwise.

When a young shoot containing the fungus in large quantity has grown a few inches above the soil, it will as experiments demonstrate, shortly suffer discoloration and afterwards perish. These instances of potato disease in the early summer attract little or no attention, because they are not numerous, and because the diseased shoots are

surrounded and hidden by healthy ones, which may have issued from the same tuber. If now, moist and warm weather ensues, from the surface of the shoot which is blackened by the ravages of the mycelium, there arises a forest of fertile fungi, which within 15 to 18 hours, developes an abundant crop of spores. From this insignificant beginning may spring the most destructive results, as will be plain when we consider the number of spores which are produced, the ease with which they are detached from the spore sacks, the fact that they retain their vitality for several weeks, and the extraordinary rapidity with which they reproduce new generations of fungi.

The rapidity with which the *Peronospora infestans* propagates from the mycelium contained in seed potatoes, is at first slow, and for a time proceeds, as has been remarked, without perceptibly injuring the vigor or luxuriance of the stems and foliage of the potato plant.

This statement is not a mere inference from what is known as to the potato disease, but is proved by actual experiment. De Barry infected healthy potato plants having vigorous foliage, with fungus spores, in a room where the uniform condition of the atmosphere was certainly far more favorable to fungus development than the free air usually is, and he found that where hundreds of germs had penetrated the potato stems, it required 29 days before the fungus had spread through 8 inches of stem in one case, and through 4 inches in another. In these instances fructification did not take place, and the potato plants grew well, branching and leafing out luxuriantly.

If the fungus is sown upon potato leaves they often remain to all appearance healthy for a long time, even when microscopic investigation demonstrates that the fungus has penetrated the tissues.

These facts explain why the disease does not at once ravage a field into which it has been introduced by the planting, but on the contrary remains comparatively dormant until the potato has attained its full development, and the time of year arrives when the external conditions are most suitable for a rapid and devastating growth of the fungus.

It is easy to imitate artificially what thus happens in Nature, and at any season to change the slow process of infection into the rapid one of destruction. De Barry made the following green-house experiment: In February three vigorous potato stocks grown in pots were placed in the immediate vicinity of some artificially infected shoots, on which *Peronospora* existed in a state of fructification. The plants were now frequently watered, the foliage being copiously besprinkled. In a short time the fungus established itself on the foliage of the previously healthy plants. They assumed precisely the appearance of field plants attacked by the disease in August. Leaf after leaf was affected, and in a few weeks the plants above ground were entirely destroyed, while nearly 100 shoots of the same kind of potato planted at the same time and placed under similar circumstances, save that they were shielded from contact with the fungus, kept perfectly healthy, and remained so for months afterward.

It is at present rare that perfectly sound potatoes are employed as seed. Actually rotten or badly infected tubers are of course not used, but according to De Barry it may easily happen that apparently sound potatoes actually contain the fungus. The fact is well known that tubers which have been slightly diseased never, so to speak, recover from the injury without decay, the diseased parts being separated from, though adhering to the sound, by a layer of cuticular matter. The small scabs or brownish spots seen on the surface of otherwise healthy tubers, are not unfrequently the lurking places of the dormant fungus, which only needs the moisture of the soil to develop abundantly.

De Barry gives the following summing up of the cause and course of the potato disease, viz: A parasitic fungus, *Peronospora infestans*, exists only by feeding upon the potato plant. Its mycelium penetrates the tubers in order to hibernate in them. Kept cool and dry, it vegetates but slowly or makes no growth; but in the warm season, or

* Continued from page 61

† The sterile fungus which yields no spores.

under favorable circumstances, it increases luxuriantly. Then the mycelium extends itself into the stems of the potato plant in order earlier or later to develop its spore-sacks, which, transferred to neighboring parts of the plants, yield spores that speedily penetrate the healthy tissue and produce the *leaf blight*. The parasite spreads from one or many such sources over the field, and from one field to another—the foliage of the potato becomes discolored, and the tops die down. Of the numberless spore sacks formed anew on the foliage, a large part lodge in the pores of the soil and there yield myriads of spores which penetrate the earth. Some of them reach the tubers, and within them develop again the mycelium, which serves to ensure the continuation of the life of the fungus as the tuber ensures that of the potato plant. When developed in large quantity it destroys the tuber, producing the rot. In smaller amount it causes slight, often imperceptible, patches of disease, through which it comes another year into the field, and renews its life, and perhaps its ravages.

To do full justice to this important subject, I must beg the indulgence of the readers of the *Co. GENT.* for one more article, in which I shall endeavor still further to justify what one of them, J. G. W. of Utica, designates "as an arrogant, not to say absurd, theory," and to show to those whose minds are not irrecoverably "made up," that every other theory of the cause of the potato disease is fatally afflicted with a "constitutional weakness."

Sheffield Scientific School of Yale College, March, 1863.

SHORT-HORNS AND HOME-BREDS.

Much is said among farmers at the present day, of pure bred foreign cattle and natives, or home-breds, such cattle as are common in the New England States. Few farmers are able to stock their farms with the best improved foreign breeds of any particular kind desired. Accordingly it becomes a question of no small interest to every such farmer, "How can I best improve my condition by cattle breeding?" According to the reports of the late discussion of cattle breeding, by the Legislative Agricultural Meeting in Boston, it was said by one speaker, that "the cattle of the commonwealth had been more improved by the introduction and use of well-bred Short-Horn bulls, than in all other ways." This is undoubtedly true, not only in Massachusetts but in all the eastern, middle and western States. Look at the stalled oxen from the Connecticut Valley, and it will be seen that most of them are grade Short-Horns, such as are produced by using well-bred, good stock-getting sires, with common cows, entirely without pedigree. The first cross generally makes fine stock for the dairy, for work and for the shambles. The writer almost from boyhood, having had his birth and education on a farm, noted the marked improvement made by crossing home-breds or natives, with thoroughbreds of the Short-Horn or Durham breed of cattle. In this way the dairy producing qualities of cows, the size, symmetry, docility and quality of working oxen, and the beef-producing qualities of all, have been largely enhanced, as every observer must have noted during the last quarter of a century.

What are called "natives," are all descended from importations from Europe and Great Britain, as none will deny who know that cattle are not indigenous to the United States. If our fathers did not uniformly import the best, why should their sons fail to do so, in case they have been so prospered as to be able? Does not the improvement in stock, as noted above, confirm both the wisdom and economy of the late importations of good stock? It so seems to the writer. Can any one hesitate to doubt, that he who decries this policy, utterly fails of comprehending the subject. It would seem not. Yet there are those even in New England who do it. So far as known to the writer, they are mere theorists, or unthrifty farmers, who set their faces against everything not found in the traditions of their immediate ancestors, or those of the neighborhood. Nothing, to such, can be

good or useful or true, because their progenitors did not know it, and what they did not know, is hopeless innovation, and therefore "away with it."

The thriving, practical farmers of New England know their own business, and such are almost universally introducing the improved blood of foreign breeds into the veins of their common stock, called "natives," and in so doing, are well rewarded, as the returns from the credit side of their live stock accounts, abundantly demonstrate and confirm. What is now said of that farmer who breeds from a scrub bull, raised as a stock-getter, because when a calf, no butcher would buy the worthless "native." This is no fancy sketch, for even now there are advocates for a like policy, who would not introduce a thoroughbred Short-Horn, Ayrshire, Hereford, Alderney or Devonshire bull, because the "native" is better. For the opinions of such, there is little reverence in these days, for they seem to be like those who have outlived their day and generation. Improvement in stock-breeding is the result of crossing with "improved breeds."

COLUMELLA

Confinement of Sheep in Winter.

In answer to an inquiry in the March number of *THE CULTIVATOR*, from Forkston, Pa., I will state that I have been a keeper of sheep for the last fifteen years, and have always observed that sheep will do far better confined to their yards, from the time they are taken up in the fall until they are turned out in the spring; and I am further confident that sheep will do better on plenty of good straw, and the same amount of grain, given them kept up, with a good shelter to protect them from the storms, than to run out and have what the gentleman has alluded to. The sustenance that sheep will gain from pasture or meadows in the winter season, will not only reduce them as to flesh and strength, but will take away their appetite from other more durable nourishment, and further, the same sheep kept up and properly taken care of, will shear from one to two pounds more wool than if treated in the manner formerly mentioned. I am a breeder of the pure Atwood, Robinson and Cutting Spanish stock, and if the gentleman will pay me a visit I will show him the difference.

H. A.

Cayuga Co., N. Y.

CURE FOR HERNIA IN HORSES.

MESSRS. EDITORS—Your correspondent C. G. P., asks for a cure for rupture. Perhaps my experience may be of some benefit to him. I had a horse that at birth had a small rupture, and at the age of four years the protuberance was larger than one's fist. Not finding any one willing to undertake a cure, I made the attempt myself. After cutting a liberal hole through the skin, I scraped the edge of the orifice with my knife, to make it sore. Then with a surgeon's needle and a thong of raw hide drew the belts together as near as possible, and then took a few stitches in the skin. In two weeks the cure was perfect. I used raw hide for the internal sowing, that it might be absorbed and carried off by the circulation. I have since been informed on good authority, that trepanning with silver is a certain cure. It is certainly more simple and I should think safer.

H. V. WELTON.

Waterbury, Ct.

A Crazy Cow and her Sad Death.

I want the farmer-boys to remember this cow story, and never treat a poor dumb beast in so cruel a manner.

Neighbor C. had a sick cow; so they mixed up a lot of salt and vinegar, and I don't know what else, and poured it in her ear. Immediately she foamed and raged, and plunged over a rocky precipice, forty feet or more, and there her broken bones remain.

B. J. CAMPBELL.

Glen Haven, N. Y.

CULTIVATING ORCHARDS.

It is more than twenty years since, that we performed a series of experiments, and made a number of observations in relation to cultivating young orchards. The evidence thus afforded was entirely convincing and satisfactory in favor of the practice. We had supposed this opinion to have been generally adopted by cultivators of late years, except it be in the few instances where the soil was already very rich, or in some of the regions of the South and West where hot summers and a fertile soil combined, might render cultivation unnecessary, especially with the standard pear.

We have, however, recently observed some articles in favor of orchards remaining in grass, and among the rest a communication in the last number of the *Horticulturist*; from a Berks county, (Pa.) correspondent, strongly objecting to any kind of cultivation. He says that plowing orchards "is just as sure to cripple if not kill the trees, as a raking fire of cannon will destroy a body of infantry;" he remarks that if the soil is deep and rich, it will not need cultivating; but if it is shallow the roots will remain at the surface and will be certainly destroyed if the soil is interfered with; and he thinks it absurd to attempt to raise any crop, or "to plant anything where you plant a fruit tree." He therefore allows his orchard to remain in grass.

The editor of the *Horticulturist* very properly objects to this position of his correspondent. As we regard this subject one of great importance, and that success in most cases entirely depends on good culture, we give a number of instances in proof, having yet never met the first one bearing in an opposite direction.

Many years ago two near neighbors set out peach orchards; one procured very fine selected trees, which he placed in grass land. The other had a much inferior lot of trees, but he placed them in cultivated soil, which he kept planted for several years with potatoes and other low hoed crops; in five years he had an abundant crop of fine peaches on his thrifty trees, while on the grassy orchard of his neighbor, only three stunted trees remained.

Another neighbor procured fifty fine peach trees; one-half of the ground where they were set was planted with potatoes—the other was not cultivated. On the potato ground none had grown less than one foot and a half, and many two feet and a half; on the uncultivated portion none grew over three inches, and many not more than an inch. Some years ago we visited a large market peach orchard, the trees full grown; a few of the rows stood in well cultivated corn—the green luxuriant foliage on these could be readily distinguished from the yellow, sickly foliage of the others, at the distance of a mile.

A large number of measurements have since been made of the growth of peach trees on both cultivated and sod ground. On light soils, and in sod, the trees scarcely ever grew more than two or three inches a year; by good cultivation, two to three feet was the average growth. On strong rich soils the difference was less striking; we have to-day examined a number of peach trees, several years of age, standing on land of unusual fertility—where those in grass had made shoots about one foot in length; where cultivated, the shoots were about four feet long, and measured by bulk or weight, were fifty times as great as the other. Every one who has raised peaches, knows the great superiority of the fruit both in size and quality, when raised on thrifty trees—amounting in some cases to triple the price in market.

The effects of cultivation on apple trees are not quite so great, but still sufficiently apparent—the shoots being about five or six inches when grown in grass or neglected, to two or three feet in clean mellow soil. As the trees become old the difference diminishes; but we have never seen an orchard, young or old, that was not benefited by moderate plowing and cultivation. A neighbor has a few large trees, probably forty years of age, of the Rhode Island Greening, that stand in a garden kept constantly and deeply cultivated; and if there are any that are healthier, more productive, or bear better fruit, we have not seen them. Another neighbor has a part of his orchard cultivated with crops, and the other portion in grass, the superiority of the former conspicuously visible to every one who passes.

We reported last year the case of an orchard in Massachusetts containing four acres, that had been deeply plowed, and the roots had been so much torn that a cart-load of their fragments had been drawn off. Yet it would have been hard to find an orchard in more thrifty condition, or bearing heavier and better crops. A friend stated that he thought this orchard would decline in a year or two, but did not state for what reasons nor on what principles. Root pruning, by cutting off a larger amount of roots, does not kill trees—and the common removal of small trees from nurseries, where nine-tenths of all the roots are left behind, destroys but very few.

The correspondent of the *Horticulturist* whom we have quoted, says that "the best grape-grower will not even allow a strawberry stalk to grow under his vine—because some of the elements required to perfect the vine might be carried out of the soil by the strawberry." Yet he allows the whole surface of his orchard to remain in undisturbed turf, which, according to the examples we have just furnished, is incomparable worse than a cultivated or hoed strawberry patch.

We have before spoken to our readers on the importance of cultivating orchards—but while so many ten thousand trees perish yearly, and still more grow feebly and bear poor fruit on account of neglect, the subject needs line upon line, and precept upon precept, and we cannot willingly allow a fair opportunity to pass without endeavoring to place the subject in its true light. We would not highly manure trees nor cultivate them needlessly on the rich soils of the South and West—nor mutilate the roots of orchards where it could be avoided. We find however that when owners give the different kinds of treatment a fair trial, side by side, and form their opinions from the results instead of from mere theory, there is scarcely an instance where they do not strongly approve good culture. All we ask is thorough experiment.

The other objections of the writer we have quoted, as well as of others, are, the "barking, rubbing, and skinning" of the trees. This is a matter in which cultivators can have their own choice—they can mutilate their trees or not, as they may elect, according to the care they devote to the work. We have seen a plowman, in his earnest endeavor to avoid injuring a hill of potatoes, run over and bark a young pear tree that had cost a hundred times as much. Young trees too often receive more neglect and bad treatment than either corn or potatoes—"they must take care of themselves"—the corn and potatoes will not. While this feeling prevails, they will of course be "barked, rubbed, and skinned." The roots of orchard trees, are not merely a small tuft at the foot of

the trunk, but they have covered the whole surface of the ground, long before the tops have extended half as far; and it is therefore of little consequence (except on the score of neatness,) if the plow or harrow does not pass within a foot or two of the stem. A yoke of oxen, or two horses placed *ad tandem* with a short whipple-tree, will however admit of as close working as any one may desire.

In one respect we agree entirely with the writer quoted—he remarks that “a tree should be lord of the spot planted on, and not even encroached upon by having its larder in the ground consumed by root-crops.” We can furnish him a good example in proof—a number of young fruit trees standing in a field of well-hoed beets, made only one-half the growth of another portion where the soil was kept perfectly bare and mellow by cultivation throughout the season. Yet both far out-grew other trees standing in grass, which this writer, most singularly, admits without reserve in his orchard.

IMPROVING THE FARM.

The improvement of the soil is not second in importance to any of the interests of the farm. Next to a supply of the immediate wants of his family, the farmer's first concern is to make his land more productive, for this is the source of all his advancement. It is almost universal in this country, that the low condition of the soil makes the profits of farming very small. It is very plain that the nett profits of land which produces fifty bushels of corn per acre are very much greater than of that which produces forty bushels. For if thirty bushels will pay all the expenses, there is a profit in the first of twenty, and in the second of ten bushels. If this ratio hold in all the other crops of the farm, we may be warranted in saying that an acre of the first is worth as much as two of the last. Every addition to the income of the farm above the expenses is nett profit, which shows the true value of the land. If the annual nett proceeds of an acre of land of seven dollars shows the land to be worth a hundred dollars, a nett of fourteen dollars would indicate the land to be worth two hundred dollars. Or if you please to put it in another form, he who tills a hundred acres, which produces fifty bushels of corn, and other crops in proportion, enjoys a nett income of fourteen hundred dollars a year. While he who raises only forty bushels has an income of but seven hundred.

This is conceded generally, but the American farmer is slow to show his consent to the principle, by his practice. In England it is well understood. The first thing the tenant does there, though he is to hold the land no more than twenty years, is to lavish upon it enormous expense, to ensure good crops. He cannot afford to raise poor crops. The time has come here, when we cannot afford to work upon poor land. The improvement of the soil therefore commands the first place.

The means within the reach of our farmers for this end, are limited, except in some cases where manure can be purchased in towns, or where mineral and artificial manures may be used. The chief resources are upon the farm, in the barn-yard and hog pen, and in the use of green crops. When the manure is applied chiefly to grain crops, it is but partially available for the improvement of the soil, and the necessity for immediate income from the farm is generally so pressing, that few have confidence enough in the future, or patience, to forego present profit, for sure and greater returns hereafter. We all know that it is a slow process to enrich a poor farm from its own resources, especially in the beginning. There is a certain point of poverty, at which the farm grows poorer, and from which it is a difficult and slow process to rise. There is almost nothing to begin with. It is like

the first insignificant earnings of a poor laborer to be put at interest. But if a certain point of fertility be gained, the crops will increase the manure, and the manure will increase the crops, and the farm grows rich in geometrical ratio.

The simple and obvious rule for raising the fertility of a farm, is to raise more forage, which if properly fed will add to the means of fertility. The application of this manure is scarcely less important. If applied to grass and other forage crops, the improvement of the soil will be immediate, and ultimately all the crops of the farm will share in the gain. This is the sure, though indirect way to have large and profitable crops of grain.

The grass crop should also be directly cultivated. Meadows of dry land and old pastures often need cultivation, with direct reference to the grass, not as is often practiced, reducing the land by taking off two or three crops of grain, before seeding down. There is no crop that so surely pays for the best use of the land and good cultivation, as grass. In case of worn-out land, which cannot be highly manured, it is a good course to give it thorough cultivation by a fallow, as for wheat, and then about the first of Sept. sow liberally of timothy seed, and in the spring, of clover. Those who have not tried it, will be surprised at the product of grass and the renovation of the soil. If the land is quite poor, there should be a light dressing of manure. Where farm manure is not at hand, it will be best to apply some commercial manures. I do not know of any other circumstances where guano will pay so well. It excites an immediate growth, though of course not so lasting as others.

Turning under green crops has been often practiced with success. I have tried it but little. On farms of dry land it is well to resort to sowed corn, roots, oil cake and other articles for feeding, though I suppose the main reliance should be on grass, in which there is almost no limit. And grazing is also nearly as profitable as grain growing.

I need not add to what is so fully set forth in the COUNTRY GENTLEMAN, in regard to the importance of draining wet lands, and of saving manure, &c. And I do not believe in that stereotype theory which would have every farmer sell half his land, that he may be better able to improve the other half, not being able to see how fifty acres can improve itself easier than a hundred acres can. It is certain that the renovation of a worn-out farm is a work of many years, except in those cases where manure can be purchased, and should therefore be entered upon without delay. It is also certain that no other work of the farmer will so surely be well rewarded. N. REED.

Duchess County, March, 1863.

Domestic Yeast.

Boil one pound of good flour, a quarter of a pound of brown sugar, and a little salt, in two gallons of water for one hour. When milk warm, bottle and cork it close. It will be fit for use in 24 hours. One pint of this yeast will make 18 pounds of bread.

N. J. CLUTE.

Schenectady Co., N. Y.

Water Lime Paint or Wash.

The Co. GENT. of March 5, has a brief article on this subject, giving a recipe for making a durable wash of water-lime, fine sand and salt. We noticed last season a picket fence of a pleasant drab color, and was told that it was painted with water-lime and buttermilk. It appeared unchanged by one year's time, so last fall we applied the same mixture to an out-building, the walls being formed of machine planed pine flooring. It looks well, and stands the weather so far perfectly, though one end suffered somewhat from a storm coming on while we were applying the wash, making it rough, so that it was necessary to repaint it. The color can be readily changed by a mixture of other paints, if desired. We put it on with a large paint brush—the whitewash brush not working so well to our notion.

Our water-lime appeared to contain a mixture of coarse sand, but the mason we employed said it was of the best quality for plastering cisterns.

J. H. B.

PRODUCE OF DAIRIES IN BUTTER AND CHEESE.

YEAR.	No. of Cows.	YIELD OF MILK IN GALLONS.				YIELD OF CHEESE.		YIELD OF BUTTER.				VALUE OF PRODUCE.†	
		Total.	Per Cow.	Given to Calves and P. Ge.	Made into Cheese.	Total.	Per Cow.	Milk.	Whey.	Total.	Per Cow.	Total.	Per Cow.
1855.	30	-----	--	----	-----	lbs. 10,864	lbs. 329	lbs. 2103	lbs. 691	lbs. 2794	lbs. 93	£ s. d. 444 0 0	£ s. d. 15 0 0
1856.	45	-----	---	----	-----	19,040	423	2272	647	2914	65	711 0 0	16 0 0
1857.	55	31,728	577	----	-----	25,424	464	3375	91	3466	63	906 0 0	16 10 0
1858.	52	28,247	447	----	-----	20,160	389	4687	344	2031	30	638 0 0	12 5 0
1859.	60*	32,009	533	3490	28,607	22,733	378	4729	607	2425	40	795 0 0	13 5 0
1860.	66	34,470	522	3439	31,031	29,344	444	4757	729	2486	37	1070 0 0	16 4 0
1861.	71	39,431	550	4874	33,957	32,262	454	4589	862	2457	34	1068 0 0	15 0 0

* Several had slipped calf.

† Including value of butter, and milk and whey used for pigs and calves.

The *North British Agriculturist* furnishes us the above valuable table, exhibiting the results of the dairy operations of Mr. Harrison of Frocester Court, Scotland, for the years named. The figures "state the number of the cows, the total yield of milk during the year, the number of gallons yielded per cow, the quantity made into cheese, the number of pounds of cheese and of butter made, and the value of total produce during the year per cow. It will be seen how various is the year's experience, whether as regards the quantity or the quality of the milk. And curiously enough it is by no means the year of greatest quantity which proves the year of poorest quality. When the cows yielded 550 gallons a piece per annum, the milk made .95 pound of cheese per gallon. When the yield was only 522 gallons, it made only .94 pound per gallon. The extremely various yield year by year, too, is worthy of note: not more than 329 pounds of cheese, and 93 pounds of butter per cow one year, 454 pounds of cheese, and 34 pounds of butter another year. The value of the produce, too, varies exceedingly, showing the extremely chequered experience of the dairy farmer."

VARIETIES OF WHITE BEANS.

Kidney, Marrow, Medium and Pea Beans.

The cultivation of white beans as a field crop has been largely extended within the last few years, and the demand consequent upon the great increase of the army and navy has made them one of the most profitable crops grown by the farmer. It cannot be expected, however, that the present high prices will continue another season, even if the rebellion be not put down; first, because more acres are likely to be planted, and second, because the last crop was, comparatively speaking, a light yield; yet under favorable circumstances they can be grown for \$1 per bushel, and pay a fair profit. A good deal of interest has been manifested in regard to the different varieties; hence we have gathered for your columns some items in regard to the leading kinds known in market.

The *Kidney*, or Naval bean, has not been grown very largely, save in limited sections, until the past year. It is kidney shaped, about five-eighths of an inch long, rather later, we think, than the Marrow, (those we grew were two weeks later,) inclined to vines, but yielding well, and a very superior bean for cooking. It usually brings the "top of the market," and where it can be planted early, and not too largely, so as to give plenty of time and room for harvesting and curing, will pay well for the extra trouble.

The *Marrow*, formerly known as the Mountain June, is now pretty well known and disseminated. H. T. Brooks, Esq., of Wyoming Co., in a recent issue of the *Rural New-Yorker*, gives the characteristics of this and the me-

dium variety, coinciding very nearly with our own experience. "In this section," he says, "where beans are extensively grown, the Marrow is preferred to any other. It is white, roundish, early, cooks quick, sells high, and yields well." It comes up quickly, an advantage on weedy ground, but does not thresh quite as easily as the medium, and is very liable to crack open if wet in harvesting, which injures its appearance and saleableness; and, with Mr. B. on the whole, we prefer

The *Medium*, which "is smaller, not so round, does not cook so soon, being firmer and more suitable for a sea voyage, is white, and now sells about one shilling less per bushel than the Marrow. It ripens a week or ten days earlier than the latter, a very material advantage when we have early frosts, and when we wish to follow with winter grain. According to my experience [and mine] the *Medium* yields decidedly the best, especially if the land is rather poor," but pulls less easily than the marrow, having smaller vines and more stalks. We have found the "Medium" to ripen more evenly than any other variety, a considerable advantage as regards the quality and price of the crop.

The *Pea* bean is but little known outside the New-England States, as we have never seen it mentioned in other market reports. Dr. O. W. True of Maine, gives a description of this variety in the *Genesee Farmer* for April, in answer to an inquiry from Niagara Co. We planted a few hills last season with seed from Massachusetts, and were favorably impressed with its growth and appearance, but through some one's mistaken kindness failed to save our little crop. Dr. True says:

"They are a small, white and nearly round bush bean, in length about three-eighths of an inch, a little oval, or a little wider than thick, which is about one-quarter of an inch, very handsome, and not having near so beany a taste as the marrowfat when cooked. They are not a very early bean, nor a very late one; five beans to the pod are the average; grow from fifteen to twenty-four inches, but on heavy rich soil are apt to vine some; are not large yielders, because they are so small and will not bear high manuring, but pod well and yield well according to the bulk of vines. They are easily cured, and command the highest prices for beans in the Boston market."

Another variety, quoted in Boston about fifty cents lower than the extra Pea, is the "*Blue Pod*," which Dr. True thinks the best cooking bean known. We should be glad if some of your New-England correspondents would give us a description of this variety? J. H. B.

SHAKING TREES WHEN PLANTING.—"O. K." of Rochester, Mass., says in the *N. E. Farmer*, to his mind, the practice of lifting or shaking apple or other trees when setting, to straighten the roots or work the loam around them, "results in evil and only evil. As you draw up the tree" he adds, "of course those roots that were well spread and straight are hauled out of place, and of necessity cramped and crooked as it settles. The loam should never be thrown on to the roots or against the tree—as in the one case it cannot be properly worked in among the roots, and in the other will displace the tree from its true position in the row."

Growing Flax and Barley together.

One of my neighbors last season sowed Flax seed with his Barley, and raised an average crop of each, and I wish you and your knowing readers to publish their experience in sowing these seeds together. By giving information you will confer a favor.

J. A. McC.

In answer to the above we give the experience of several correspondents, as published some years since. In *THE CULTIVATOR* for 1846, GAIUS STEBBINS of Madison county says:

It did not occur to me last spring to try the experiment of sowing barley and flax together, till I had sowed all but one acre. I then bought me one bushel of flaxseed, and on the acre which I had not sowed, I put on three bushels of barley, and from six to seven quarts of flaxseed mixed together, and sowed the remainder of the bushel of flaxseed on a number of acres more, even when the grain had come up and let it take its own course, without dragging. I had \$15 worth of flaxseed from the bushel sowing; as to the acre in question, I judged that I had fifty bushels of barley and about six bushels flaxseed. My crop was all harvested together, therefore cannot be so particular, but the farmer who wishes can learn by experiment. One idea I will add, that if farmers will sow about five or six quarts of flaxseed to the acre with their oats for horse feed, they will not need to visit tamarack swamps to obtain medicine for horses; all will be right in a cheaper way. In cleaning up the grain, if you wish to keep the flaxseed with the grain, a thin board must be substituted for the lower sieve in the fanning mill, otherwise the flaxseed will be left in the tail box.

In the same volume, another correspondent writes as follows:

In a conversation with a gentleman from Montgomery county yesterday, he informed me that a number of farmers in the town of Florida, had made the experiment in sowing flaxseed and barley together, and in every instance succeeded admirably—that he sowed himself (on a certain piece of land, not specifying the amount,) ten bushels of flaxseed and eight bushels of barley, which produced one hundred and thirteen bushels of seed and eighty bushels of barley. He also informed me that his cattle eat the flax and barley with a good relish.

In *THE CULTIVATOR* for 1850, we have the following statements:

I recently purchased from Mr. Lawrence Gardener of Charlton, Saratoga county, N. Y., a little short of twenty bushels, which he raised among his barley, from a little more than a peck sown. Mr. Gardener assured me that the flax by no means interfered with the growth and yield of the barley—that it did not interfere with the harvesting, but on the contrary, it kept the barley so together as to render the harvesting less difficult.

Mr. Reed Mills of South Williamstown, Mass., states that he sowed an acre and a half of ground with three bushels of barley and one of flaxseed. Before sowing he soaked the barley in weak brine 24 hours, then rolled it in plaster, and added the flaxseed, mixing both together. He obtained 40½ bushels of barley, 9 bushels of flaxseed.

REMEDY FOR STRETCHES IN SHEEP.

MESSRS. EDITORS—I noticed an article in the *Co. GENT.* of Jan. 8th, signed "R. N.," Randolph, Vt., giving an account of a Farmers' Club which was held at that place. The part to which I wish to allude is stretches in sheep. I have formerly kept a large flock, and have lost several by the above disease, but found what I considered a sure cure? When the first symptoms are discovered, bleed the sheep freely in the third ridge or wrinkle in the mouth, and drive it around the yard for a short time briskly, causing the blood to flow copiously. I have often tried the above remedy with perfect success. If it should prove as successful to others as it has to me, it is well worthy of a trial. D. M. M. Delhi, N. Y.

FEEDING CABBAGE.

During the summers of 1857 and 1858 we kept only one cow. Our pasturage being very limited, and cow breechey, we looked around for something to soil, or furnish her with green feed during the latter part of the summer and fall. Having a patch of growing cabbages, numbering 1,200 or 1,400, it occurred to me to try picking and feeding the lower leaves of the growing cabbages. When the cabbages got well to growing, and throwing out large leaves, we commenced picking and feeding, and continued until late in the fall, when we gathered the crop. We began to feed gradually until we fed the animal all she would eat. Her condition improved, and she yielded a good flow of milk, which produced a fine amount of butter. But there was one drawback. The butter had a flavor of the cabbage; but after using a few times we became accustomed to this, so we did not notice it. This flavor would make it objectionable to some people, but perhaps not to the lovers of the cabbage. In the fall we gathered a good crop of well headed cabbage, the picking seeming not to have materially injured the crop. We did not pick over one-half of the patch, as the fresh leaves (of the part located near the yard) grew as fast as we could use them. In the summer and fall of 1858 we tried keeping store pigs almost entirely on cabbage leaves, picked fresh for them twice a day. They grew finely. The results of these experiments satisfied us so well that we have continued the growth and feeding of cabbage—as far as our circumstances have permitted—and have reason to be abundantly satisfied with the result. Let your readers try the experiment and report the result.

Dodge Co., Wis., March, 1863.

L. L. FAIRCHILD.

Remedy for the Onion Maggot.

MESSRS. EDITORS—Having seen a good deal in the papers about the Onion Fly, I concluded to tell you how I treat my onions. Some time in July I have a barrel set in some convenient place, put about half a bushel of wood ashes in it, then about the same quantity of bones, and fill the barrel two-thirds full of ashes, and have it well wet with chamber slops. From that time till the next spring I have all soot from the stove pipes and the cleanings from the stove chimneys, put into the barrel and wet with slops. When the maggots make their appearance, I have the contents of the barrel well shovelled over, and put on to the onions about an inch deep in the rows. If it is deeper it is no matter. The first rain will wash it down. Last spring the maggots made their appearance when the onions were quite small. I was afraid they were spoiled, but applied the dressing and saw no more of them.

Saratoga, N. Y.

A SUBSCRIBER.

A BIG PIG STORY.

EDITORS *Co. GENT.*—Supposing I could tell a bigger pig story than any other of your subscribers, I have thought you might choose to publish my statement.

I have now in my pen a breeding sow with a family of 12 pigs three days old—two of the litter have died, making 14. In September last she had 13, of which 11 lived. First of April last she had 13, of which 11 lived, making 40 pigs within eleven months.

The 11 first April pigs I fattened and killed at 9 months old, and they weighed when dressed, as follows: 345—342—322—318—319—310—308—292—252—263—280 pounds. At the price I am offered for the pork in the barrel, and the lard, the 11 would make me over \$7 per hundred.

Saw 3,550 pounds at 7 cents.....	\$244.50
Some of the Sept. litter I sold when five weeks old at \$2 each,	
and gave some to friends—11 at \$2 each.....	22.00
12 now in pen are worth \$2 each.....	24.00

Total.....\$290.50

Trumansburgh, N. Y., Feb. 23, 1863.

WARREN HALSEY.

A GREAT LITTLE FARM.

There has been formerly some discussion in this paper on the subject of the most profitable size for farms. This discussion we shall not renew at present, but merely add a few facts which may have a bearing upon it. The best specimen of farming on a small scale, that we are acquainted with, is that of NATHAN G. MORGAN, who resides near the village of Union Springs, N. Y. He formerly had a farm of 300 acres—he subsequently reduced it to 160—but afterwards, in consequence of protracted illness in his family, he removed to his present place, which consists of only eleven acres. He has occasionally remarked that even this is too large.

From this diminutive farm he sells annually, on an average, besides retaining enough for the use of his family, about two hundred dollars—he has sold three hundred dollars of farm products in a single year. He performs all the labor with his own hands. He is especially successful in raising *pork*, and finds this the most profitable branch of all kinds of farming, much more so than raising wheat. He long since gave up raising cattle as being far less productive. His corn crop averages about 80 bushels per acre—he has raised in a former year, 130 bushels of shelled corn per acre. By his mode of management in pork-making, he realizes a dollar a bushel for his corn when the pork is five cents per pound in market. He keeps a good horse on one acre of land the year round, by soiling, feeding corn, &c. He thinks corn, fed in the ear, the best grain for horses, as they are long in eating it and it therefore digests well; but fed to swine its value is nearly doubled by grinding and scalding. He is a successful fruit-raiser—and his whole premises indicate neatness, order, and good management.

He thinks that a large farm may be made as profitable as a small one if equally well managed; but the temptation, in nearly all cases, is to do the work too superficially. If he had ten boys, he says 100 acres would keep them all profitably employed.

It is intended to give a detailed account of his mode of making pork, in the next Illustrated Annual Register.

LETTER FROM JOHN JOHNSTON.

NEAR GENEVA, N. Y., March 19, 1863.

MESSES. EDITORS—In your last issue, page 192, your correspondent mentions Mr. CLARK'S cattle. One of them, or perhaps two, were fattened by me. On the 13th ult. I sold Mr. C. one 5 year old steer I had fed for 3 years, weighing, I suppose, about, or perhaps some over, 2,800 pounds. He was a very fine animal. I at the same time sold him a very fine cow, 5 years old, estimated to weigh 2,200 pounds; she had not had a calf for nearly two years, was milked until she left me, and she was a very fine animal, high grade Durham. The steer was part Durham, part Hereford, and part of the common stock. The price at which Mr. C. sold them appears high, but at the price the feeder would not be paid for the length of time fed. Although I advocate high feeding, I don't advocate feeding a long time with cattle of two years old and upwards; after they have got to be what is called extra or prime beef they never pay for longer keep, especially pure Short-Horns, which come early to maturity, and should go to the butcher from two to three years old, and then they are very profitable cattle to fatten, the most so of any breed I am acquainted with.

I sold a pure bred Durham heifer to the butcher on the 3d inst., 2 years, 11 months old, that weighed alive 1,670 pounds before being shut up at sunset, without food or

water until 8 A. M. next morning, when he weighed 1,625 pounds, losing 45 pounds in that time, which is about the same as I generally find the loss. Now this heifer had a calf on the 23d of last September—the calf sucked her 4 months and 10 days, and she was milked afterwards until the day she went away. Her feed was 4 quarts of corn and cob meal daily, with cornstalks for fodder, and no more. The pure bred Durhams are wonderful cattle to fatten, but she was a poor milker. I have not heard her dressed weight, only that she had 150 pounds of tallow, exclusive of the kidney tallow.

I have two yearling steers, grade Short-Horns, (will be two years old the 8th and 15th of next month,) that weighed on the 26th ult. 2,830 pounds, having gained 1,230 pounds in the last 12 months. I expect that by the first of May they will weigh 3,000 pounds, or over, and think I can sell them then for \$160. They got nothing but pasture last summer and autumn; their feed since the 1st December has been 4 to 5 quarts of cob and corn meal each daily, with cornstalks for fodder, until recently; I got a chance to buy some oil cake meal as cheap as corn is selling, and I now feed each 4 quarts of that daily, and hay. I fattened 150 sheep this winter on buckwheat and straw. I bought the buckwheat a year ago, when very low. Fattening sheep has been very profitable this winter, owing to the enormous price of skins.

We have had a very mild winter, very little snow.

JOHN JOHNSTON.

The Division of Sheep in Small Flocks.

EDS. CO. GENT. AND CULT.—I frequently notice articles in your paper relative to the Winter Management of Sheep. Said articles are not unfrequently written by men extensively engaged in Sheep husbandry, and being in possession of large numbers of sheep, they recommend the division of flocks into numbers, larger than the majority of the readers of the COUNTRY GENTLEMAN possess.

Now some of these minor breeders may entertain the erroneous idea that because they possess fewer sheep than these extensive breeders recommend being placed in one flock, that a division in their flock is entirely unnecessary, although they have sheep of different ages and strength. Now a division is, in my opinion just as essential in a small flock of 50, if said flock consists of sheep of a different age and strength, as in a larger one of 200. Every one acquainted with the habits of sheep, must acknowledge that a flock of wethers and of breeding ewes and lambs, will not thrive equally if confined in a flock together; for proof of this we have only to refer to some flocks within our knowledge managed in this way. More especially will this prove true if you are desirous of feeding your sheep grain, which in no case should be neglected. The larger and stronger ones will crowd the weaker ones from the trough, and they will fail to obtain the daily allowance designed for them by the otherwise careful shepherd. Almost every owner of sheep winters more or less lambs, breeding ewes and wethers. My plan and practice is to place my wethers in one flock, breeding ewes in another, and lambs in another, and by this practice I am enabled to feed as circumstances dictate.

Lambs require more careful attention than the sturdy wether or the breeding ewe, and for this reason should they be kept separate from other sheep, and be fed upon good hay twice a day, and some bone and muscle producing grain once a day. Oats will answer their purpose very well. I practice feeding breeding ewes corn and oats of equal quantities, and never have any trouble in rearing my lambs. My flock of 23 ewes in 1862 raised 30 lambs, all of good size. I have one ewe that has outstripped the others, and given birth to 4 lambs in a trifle over 9 months, all alive and well. Wethers may be kept upon poorer feed, with less actual loss to the owner, than the breeding ewe or lamb. Yet I wish to be understood as advocating the principle that whatever is worth feeding at all is worth feeding well. But wethers having

generally attained their growth, there would be less danger of stinting, than would be the case with the lambs, and not being dependent upon them for rearing lambs the ensuing spring as would be the case with the ewes.

Another important advantage derived from the division of sheep into small flocks, is the small amount of time required for the distribution of the grain. Whereas, in case the flock was large, more time must be occupied in distributing the grain, and the timid ones would be kept longer from the trough by your presence, while the tamer ones would rush in and obtain more than their honest share. W. F. BAGGERLY. *Wayne Co., N. Y.*

More about Cheese Factories.

The Wapping Farmers' Club, page 159 COUNTRY GENTLEMAN, make two inquiries which I consider myself bound to answer.

To the first inquiry I would say that heretofore all the cheese factories with which I am acquainted, have been constructed on private account for the sole purpose of profit—the owner of course furnishing everything, and with no guarantee of the milk of his neighbors' cows beyond one season; after that he depends upon mutual self-interest to continue the connection.

By skillful manufacture, by the production of large cheeses, and by the production of cheese through a longer number of months than any private dairy could possibly do, the cheese factory has been enabled to pay its customers more money than they could have sold their own dairy products for. Besides, they have saved the female part of the household an infinite amount of work, and no farmer that I ever heard of has gone back from the factory to the private production of cheese. There is no danger of a well located cheese factory, having the advantages of nearness to the milk producers, and reasonably well managed, losing its patronage.

I said that heretofore all the cheese factories with which I was acquainted, were built on private account; lately, however, several have been organized as joint stock companies, which in New York is effected under a general law, embracing every variety of manufacture from a cotton mill with a capital of half a million down. These companies expect of course to save the one cent per pound which the private factory exacted, but it is questionable in my mind whether they will realize their expectations. What is everybody's business is too often nobody's business, and it is doubtful whether all sorts of waste, with a want of responsibility, will not cost the companies all they expect to save.

As to inquiry number two, I say decidedly, that 80 to 100 cows in the aggregate, will not make a cheese factory pay. 300 cows is the least number that it would do to start with, with a view to profit. Your largest cheese maker might add his neighbor's milk to his own, and in that way make something upon the smallest number named.

The Wapping club can easily calculate for themselves. It is a good dairy that will make 400 lbs. of cheese per cow. Now multiply 400 by 80, and you get 32,000 lbs. of cheese, which at one cent per lb., would yield \$320. But to make this cheese you would require quite as expensive a factory, and two-thirds as much help as you would for 300 cows. W.

Utica, March, 1863.

BUTTER FROM EIGHT COWS.

MESSRS. EDITORS—Having been a reader of your valuable paper for several years, and occasionally seeing therein statements in regard to the products of dairies, large and small, and being a little partial to that kind of husbandry, having had some experience therein, I thought I would give you a statement of the product of a small dairy of eight cows, between the 20th of March and the

20th of Dec. 1862, hoping some of your numerous patrons will profit therefrom.

The cows are owned by CALEN FROST, a resident of this place—a plain unpretending farmer, and worthy member of the Society of Friends, who gave me the statement of amount of butter made, &c. I might add that friend Frost has seen too many years, to be able to labor in the field with his hands; he therefore keeps his eye upon his business, and attends to the working of the butter in person.

The amount of butter made was two thousand eighty pounds, just 260 lbs. per cow at that date (Dec. 29,) and he was making butter from them a few days since when he gave me the statement.

The butter was in part marketed in pails and part in firkins, and brought an average of 25½ cents per pound.

The milk was fed to one yearling bull, and the remainder to two sows and pigs, butchering and selling off the pigs as they grew to require more feed than the milk and pasture to which they had access afforded them, making two thousand five hundred and fifteen pounds of pork. And that without feeding but a very trifling amount of grain, notwithstanding the opinion of your correspondent J. L. R. of Jefferson county, as published in your paper of the 5th instant, "that skimmed milk is scarcely worth the trouble of feeding."

From about twenty years experience in dairying on a small scale, having kept from ten to fifteen cows most of the time, I am of the opinion that there can and should be made from the skimmed milk (with perhaps a small clover patch for the pigs to run in,) at least as many pounds of pork as butter, as was in this case, or at least would have been if the milk fed the bull had been given to the pigs.

I regret that Mr. Frost did not keep an exact account of the manner of management with, and amount of grain fed both to the cows and pigs. As he did not expect his dairy would receive any public notice, and looking only to the profits, he did not consider it necessary.

But he gave me the following general statement of his keeping his cows. First, they are well housed and stabled through cold weather, and fed through the winter and spring on straw, stalks, hay, and a little grain; he could not say just how much, but not differing very materially from other good farmers. Through the summer to Sept. 1st, he fed the 8 cows in their stall, ten quarts of corn meal once a day, making a little over one quart of corn meal each cow per day; and from Sept. 1st he fed them one mess a day of corn fodder, cut and fed from the lot, until cold weather set in and foddering time arrived without other feed except pasture. And now let us see how the figures of this small dairy will look.

2,080 pounds of butter, at 25½ cents per lb.....	\$530.40
2,515 do. pork, at 6 do.	150.90
8 deacon skins, at 50 cents.....	4.00
And I might add, just "to be in the fashion," that the milk fed the bull was worth about.....	8.00
And cream and milk used in a family of six persons, about..	6.70
	\$700.00

Which would make in all the sum of seven hundred dollars, or eighty-five dollars per cow. Deduct from the above the value of the two hogs and the extra feed, and see how it will then stand:

The two sows in March, and before dropping their pigs, worth about.....	\$20.00
80 bushels screenings and unmarketable grain, worth about 45 cents per bushel.....	36.00
40 bushels corn meal fed cows, worth here last summer 6 shillings per bushel.....	30.00
1 acre corn fodder fed cows.....	14.00
	\$100.00

We now have left the snug little sum of six hundred dollars, or seventy-five dollars per cow. A fair return I think for the ordinary expenses of the dairy, and one that will compare favorably with any other farming operation, even the raising of wool in these very woolly times.

I designed saying something in regard to the breed of the cows comprising this dairy—also something of the breed most likely to produce great milkers, &c., but as I have extended this communication too long already, I will omit it for the present at least. WM. R. TANNER.

Medusa, Albany Co., N. Y., March 7, 1863.

Agricultural Notes in Cayuga County—I.

As I shall prepare a Report on the agriculture and mechanics of our county, in connection with the agricultural and horticultural statistics, which we are now collecting, I propose to pen a few articles on Cayuga county farming, and on the various subjects intimately connected with farming in our county. My plan now is to visit every town in the county, during the coming season, and to learn what kinds of grain are grown for the most part in different localities, what kinds of stock are raised, what improvements have been made, and are now in progress, both in the field, in the flocks and herds, and in agricultural tools and implements, and to give the details of the systems of management among good and successful farmers. And I trust that the readers of the COUNTRY GENTLEMAN and CULTIVATOR will be somewhat interested in the notes that I may be able to furnish you for publication. I shall aim to be practical and brief.

Farmers' Gathering in Fleming.

As it was announced in our city papers that there would be a gathering of farmers on the 14th of March, at the residence of Mr. Henry O'Hara, the President of the Cayuga County Agricultural and Horticultural Society, H. W. Dwight invited me to ride with him to the gathering, about seven miles out of the city. While there we looked around a little to see what improvements he had made, and is now making, &c.

His spacious barn and sheds and stables were all in good order; his tools and agricultural implements were all under shelter; his cattle and sheep were all in good condition, and everything appeared to have a good place and to be well cared for.

In one part of the barn is the horse power, with which he thrashes his grain, grinds it, cuts his straw, grinds apples, &c. On one side are cattle stalls, and on another are horse stalls; and here is a spacious meal box, and there a grain box; and on one side—all under shelter—is a watering tub, where horses can drink, or water can be obtained for mixing cut feed for stock of any kind.

His cows, of which he has several good ones, all have good stalls, with a door behind each one, where they feed from racks and mangers.

A Model Sheep Barn.

At a short distance from the main barn, is a sheep barn, the lower part of which is occupied as a shed and feeding apartment also. On the upper side of the sils, entirely around the building, is a trough for feeding grain. A few inches above the trough is the hay rack, constructed with rungs, or rounds like a ladder. The hay is pitched into the rack from above, and if the sheep chance to pull out more than they eat, the mangers or troughs will catch it, when they will eat it before it drops beneath their feet.

And here is another feature which is worthy of note. None of the hay is wasted by being scattered about the yard, and when thrown down the sheep cannot run over it. And, more than this, they waste less, and eat their hay cleaner, than they will with any other rack that I know of.

When sheep can thrust their heads into hay, as they do into the box racks, they will usually select the better portions of hay first. But in this style of hay racks they are obliged to pull out both good and poor at the same time. The sheep are all fed under shelter, and when the winds howl, and the cold and wet storms rage without, the sheep can all be comfortably protected from storms by closing the windows and door. In mild weather, as the windows are all made to slide, they can be opened at pleasure.

The siding of this barn consists of inch boards, with the joints neatly matched, so that no snow can drive through the cracks on the sheep, which is a very important consideration in our climate, where we have such sudden transitions from heat to severe cold.

A portion of the space below is divided into pens, in which ewes with young lambs, or any other sheep, may

be kept when it is desirable to separate them from the flock. His sheep have access to pure water at all times, and are well littered with straw, not only in the barn, but in the yard.

The Poultry House.

Mr. O'Hara keeps a good variety of fowls, and a good number of Cayuga Black ducks; and they enter the poultry house through small doors in the wall, on which the building stands. The building is about 14 by 16 feet square; and the lower story is used as a feed-room; and on each of its sides there are rows of boxes for nests. This room is well lighted, and in cold weather can be closed tight, so that the fowls have comfortable quarters.

The hens, geese, ducks, and all, ascend into the upper story to roost, on a wide inclined plane, with cleats nailed across it, to keep them from slipping. Small chickens will soon learn to ascend to the roost, where they are safe from nocturnal marauders in quest of poultry.

The poles on which the fowls roost, extend the entire length of the building, about one and a half feet below the rafters; and they rise one above the other, like steps, from the plates to the ridge of the roof. All the droppings fall on the floor without touching any of the fowls on the poles below; and there is sufficient room beneath the fowls to walk along and take any fowl from either of the poles, without disturbing the others. Here, beneath the roost, is collected enough of the most choice hen manure to produce fifty bushels of Indian corn, were it properly applied to the corn crop.

In addition to the animals already mentioned, Mr. O'Hara has two as fine brood sows, of the black Berkshire breed, as we have ever met with, which will farrow about the 1st of April. The Berkshires rank about as high in our county as any other breed of swine. The only objection that I have ever heard raised against them, is their small size for market pork.

Experiments with his Cast-iron Mill.

The chief attraction of the day, was the operation of Mr. O'Hara's portable grain-mill, which is driven by his eight horse sweep-power.

In order to show us what it is capable of performing, he hitched on eight horses, and the mill was run at moderate velocity. President H. W. Dwight held his watch, and they ground in fifteen minutes, five bushels of Indian corn, oats, and buckwheat, in a good and farmer-like manner—sufficiently fine for any kind of animals to eat. He then took off four horses, and attached the sieve, and ground a half bushel of Indian meal. After this, he ground a half bushel into coarse meal or samp.

Then they ground a half bushel of the China-Tea wheat, and a half bushel of the white-flint winter wheat, and bolted it at the same time, making superfine flour. I took home with me a portion of the flour, and no one can perceive any difference between this flour and the best flour that has been made with burr-stone mills.

Varieties of Grain.

Mr. O'Hara raises the White-flint winter wheat, the China-Tea spring wheat, the six-rowed barley, the yellow eight and twelve-rowed Dutton Indian corn, the white, red glazed, and a variety of the Western *Dent* Indian corn, which he assured us will mature well in this latitude.

We have seen no fairer specimens of grain in the county, than we saw here. As cold winter reigned without, and as snow covered the fields, we could not examine any field operations.

Construction of Water-Works.

At a distance of a few hundred yards from the barn, there is a spring of never-failing water. From this spring to the barn, and thence to the house, there was a ditch dug about two feet deep, in the bottom of which a row of two-inch tile was laid, which conducts the water to the barn, and to the house, at all seasons of the year.

A coating of water-lime and sand was plastered entirely around the tile, so that the joints were all rendered watertight. It operates well, and will be as durable as the hills. S. EDWARDS TODD. Auburn, N. Y.

CULTURE OF THE STRAWBERRY.

In twenty years experience I have found spring the best time for setting the plants. When I first commenced I followed the mode indicated by most writers, i. e., autumn planting, hilling, and cutting the runners. I lost many plants by the dry weather, and after much labor was poorly rewarded. I then determined to try spring planting—setting my plants one foot apart, each way, hoeing to keep the weeds down, until the runners commenced growing, and let them fill the bed—in the fall, give them a thorough weeding—in soil dry enough not to heave. Any hardy variety will winter well without covering. In the spring, when sufficiently dry not to pull the roots, I have them thoroughly raked off with an iron toothed rake; if some are pulled, no matter. I then have them cut into beds three feet wide, by spading paths one foot wide, weeding and thinning out the small plants. As the plants grow they will cover the surface and keep down the weeds. After they are through bearing I have them thoroughly wed; the next spring wed and thinned.

Such a bed will last three or four years, but it is better to start a new one every two years.

For fifteen years I have not failed of having all we could use, three times a day, and plenty to give away.

One great advantage is the saving of labor; another, that the fruit is always clean, even after a hard shower, and is not exposed to the depredation of birds.

One year I tried a bed 20 feet square, of the McAvoy Superior, in hills, and found the robins would not give me my half for raising—they took them all, thus releasing me from any obligations in the future. With the Wilson's they were more generous.

I grant that with hills and careful cultivation, you can raise larger fruit; but in my way I can beat any one where saving of labor is an object.

New-Lebanon, N. Y.

How to Destroy the White Grub.

EDS. OF CO. GENT.—Observing in your no. for March 26, p. 208, an inquiry how to destroy the large white grub with brown head, and also the like inquiry in a former number, I will mention how I got rid of that pest, though perhaps not the best way. Ten years ago this spring I for the first time planted corn on a field, on the North river alluvial flats, of 15 acres, where the earth was sandy, gravelly, and clay loam. The field had undoubtedly been under cultivation some 150 years, and probably cropped most of that time. On turning up the ground for corn I found it badly infested with the grub before mentioned, and which was very destructive to the corn, so much so that I got not more than a half crop. In the fall, after husking and drawing off the corn, I turned my swine in, and after picking up the scattering corn they went to work at the grubs, and I found they possessed an instinctive knowledge where to root for them.

As I got but a poor compensation by that crop, I was determined to levy another installment the next year; so I drew my fresh manure on in the winter as it was made in the stables, and what I could collect from the yards in the spring. At the proper time I had the manure spread and the ground plowed, part of it nine inches deep, part seventeen inches with the double Michigan, and the residue twelve inches with the same plow, having the swine in the field during the spring until the planting commenced. I had a fair crop of corn—about forty bushels of shelled corn to the acre on most of the field, and a fine crop of roots, mangolds, bagas, carrots, and potatoes, on the residue—the best on that part plowed seventeen inches deep, the poorest on that nine inches. All the crops had their share of the different depths of plowing.

The next year it was sown to oats in part, and barley on residue, and seeded to clover, timothy, and red top. Had a good crop of oats and barley, and seed took well.

Then pastured three or four years, mostly with sheep. Then manured in winter and plowed in spring, and raised sixty bushels of corn to the acre from the field. Then a good crop of barley; with it seeded again, and last summer cut a prime crop of hay.

I rarely discovered a grub after planting the second year. I had been told that the field had not produced a middling crop for ten years before I cultivated it as above stated. That field is now cured.

Some seven or eight years ago I found an old meadow of forty acres, badly infested with the same grub. This field is of black mold. After haying I turned my swinish multitude on the field, and found they knew where to find the grub. Where the worm had cut off the roots of the grass, the swine would turn up the turf and devour them; and that was the last of the grub discoverable on the farm. The next spring that meadow was dragged with a fine-toothed drag, then seeded and rolled, and produced a good crop of grass the same year.

And now let me advise the reader *never to ring a pig*. If he is tolerably well fed, he will root only for worms, and the more the rooting for them, the better for the farm.

Saratoga Co., N. Y.

Z. A. LELAND.

CURING CLOVER FOR HAY.

TREASURY DEPARTMENT, WASHINGTON, March 13, 1863.

MESSRS. LUTHER TUCKER & SON—A farmer in this vicinity, formerly of Pennsylvania, having cured his clover hay in, what appeared to me, a novel way, but which, if successful, produces a great saving of both labor and hay, and having seen a sample of his clover thus cured, which is very fine, I procured the enclosed statement from him for the benefit of "those whom it may concern," videlicet farmers; and I now send it to you for the same purpose.

N. SARGENT.

FAIRFAX CO., VA., MARCH 12, 1863.

HON. N. SARGENT: Dear Sir—In reply to your note of yesterday permit me to disclaim any merit in the curing of clover hay. Sometime in the winter or early spring of 1861, I had a conversation on farming with Huey, a friend and farmer, residing in Chester Co., Penn., who was on a visit to Washington. In the course of conversation, he remarked that he experienced no more difficulty in the curing of clover, than he did in that of timothy or other grasses. I requested him to give me his method, which I followed as closely as I could remember, in manner following, viz:

I waited until about two-thirds of the heads of my clover grass were well browned. I put the scythes in about 9 o'clock, A. M., and continued cutting till about 2 o'clock P. M., and without turning or winnowing the grass, I immediately began to haul it into the barn—commencing where I cut first, and continued until all had been secured, which was, say 5 o'clock the same afternoon, and before the dew began to fall. I continued the same process next day, until the mow was full to the roof, pressing and packing as closely as possible, from the first to the last load. No salt was used.

After the grass—for grass it really was—had lain in bulk a day or two, the sweating process began, and continued for at least two weeks, and in which time the mass had shrunk say a fourth or more. During a portion of the time this sweating continued, the hay was very hot and quite wet—not damp—and by striking it with the hand, the water was dispelled in every direction. I next filled the space with oats, for the purpose of pressing the hay still more closely, and it remained in that situation until November, a period of about four months. After the oats had been removed the condition of the hay had entirely changed. For six inches, probably, the hay had molded, and was exceedingly dusty, but that portion being removed, the remainder I found to be perfectly sweet and bright, possessing all the virtues of the sample I exhibited to you yesterday morning.

HENRY C. STROMAN.

THE CULTIVATION OF FLAX.

The demand which is certain to exist for textile fabrics of every kind during the continuance of the "cotton famine," has directed the attention of both manufacturers and farmers to the culture of flax, and we are glad to know that there is a prospect of the extensive sowing of this crop the present season. The paper makers alone can use large quantities of the straw, and its production will thus be a relief to the wants of publishers. In the report read by Mr. JOHN STANTON GOULD at the late Annual Meeting of our State Agricultural Society, the following hints are given as to the main requisites in the management of the crop:

The most essential condition for the profitable growth of flax is good drainage, either natural or artificial. It is a waste of labor and money to sow flax seed on land where water stagnates round the roots. The next is to plow the land deeply, and to pulverize it thoroughly. The roots of flax will, unless prevented by a hard subsoil, penetrate full half the length of the straw into the ground, and the length and the size of the straw, other things being equal, will depend upon the length of the root. Hence if the farmer fails to fulfill these conditions, he will incur a heavy penalty.

The seed should be of the growth of the preceding year, plump, heavy, glossy, of uniform size and color, of a clear brown hue; if there are many seeds of a light drab chocolate color, the lot should be rejected. The seed to be sown varies in amount, according to the quality of the soil, and the portion of the crop which is deemed most valuable. Rich soils require less seed than poor ones, and where the production of seed is the principal object of the farmer, a smaller quantity is sown than where the lint is the chief object. When the culm begins to branch its value as flax ceases; hence that flax straw is most valuable which has the greatest length between the root and the branches. Thin sowing increases the tending to branch—thick sowing diminishes it. Where seed is the principal object, one bushel is sufficient to sow on very rich lands, or one and a half bushels on poor soils. When lint is the chief object, three bushels of seed should be sown.

Weeds, which are well known to be injurious to all growing crops, are peculiarly so to flax. No pains, therefore, should be spared to purify the flax seed from all foreign admixtures; and with a view of burying the seeds which have lodged on the surface of the soil, beyond the reach of germination, the plowing should be done with a Michigan plow, which more completely inverts the surface than any other; it is also desirable that the sowing should be suspended long enough after plowing, to give the seeds of any weeds which may be in the soil time to germinate. They are then to be killed by the cultivator, when the seed should be evenly sown and harrowed, once in the line of the furrows, and once angling with them, so as to diffuse the seed more equally; the field is then to be rolled smooth.

Many good farmers think it is for their interest to weed the field by hand after the plants are from four to five inches high. This is done almost universally in Ireland and Belgium. Where weeding is resorted to, care should be taken by the workmen to avoid any rotation of their feet. They should be set down and taken up perpendicularly, and the weeding should be done facing the wind, which will then assist in raising the trodden down plants. It is necessary that the land should be level, for if thrown into ridges the straw matures unequally; it should be smooth, so that the crop can be gathered with a reaping machine.

Soon after the bolls are formed, the lower leaves begin to fall off, and the straw becomes yellow from the bottom, about half its length upwards, when it should be pulled or cut with a reaping machine very close to the ground; if it is suffered to stand much longer than this, the straw is materially injured. The seed is then to be separated

from the straw by means of a rippling machine. It is very desirable that the seed should be completely separated from the straw, because if any of them are left on, they are crushed in the breaking machine, and where the oil comes in contact with the fiber, it is almost impossible to separate it from the shive.

SPRING WHEAT.

The circumstances of the country and of our agriculture, were never before such as to promise the farmer greater inducements for exertion, or a better reward for his labors, than at the present time. A good market, at fair if not unusually high rates, may be confidently anticipated for all the Grain he can raise; and with the prospect that the West, with its diminished force of labor, cannot produce so vast a crop the coming season, as it has done during the three that preceded it, there is especial reason why the Eastern farmer should endeavor to increase the production of the older States. Under these circumstances we copy the following timely article on the Culture of Spring Wheat, from the Boston Cultivator, and hope it may lead to the growing of a larger breadth than usual of this important staple:—

It is yet too early to know how the fall-sown wheat has withstood the winter. We fear the weather has been unfavorable for it, from the frequent thawing and freezing. There can be no harm in preparing for a large sowing of spring wheat. The remark is intended for general application; but in regard to the cultivation of spring wheat in this State, and New-England generally, a few words may not be out of place.

Spring wheat succeeded very well, on favorable soils, in this section, for several years previous to the last. Some good crops were obtained last year; but the general yield was not so good as that of 1861. The principal cause of the failure was blight or rust. In a few instances the grain aphid injured the crop; but the injury from this insect was on the whole less than in 1861. The character of the last season, in this section, tended to produce blight. It was wet, with sudden alternations from clouds to sunshine, at the critical period when spring wheat was in blossom or the grains just beginning to fill. Such a season may not occur again very soon.

The soil best adapted to spring wheat does not differ materially from that which is best adapted to winter wheat. A pretty stiff loam, if sufficiently dry, is preferred. Stiff or clayey soils are, however, more retentive of water, and unless drained are liable to be surcharged in a wet season, and this induces blight.

Wheat does very well after corn. It is not advisable to apply fresh barn-yard manure to the crop, as it induces too rank a growth of straw, which is very liable to lodge down, or if it does not, is prone to rust. If the corn crop was well manured, no manure of any kind will be required for the wheat. But if the ground needs any, a light dressing of rotten compost spread and harrowed in, or a dressing of leached ashes, (the older the better,) or a few hundred pounds of ground bones, will do best. These manures do not increase the tendency to rust.

Perhaps a word should be said in regard to salt, as an application for wheat. It is sometimes called a *manure*; but so far as it has been carefully tried, either in England or in this country, its advantage is acknowledged to be to *check overgrowth*. Whether a substance which produces this effect can be properly called a manure, will not here be discussed. Its effect when applied to wheat, is to check the growth of straw, which thus becomes more stiff, less likely to lodge down, and consequently more likely to produce perfect grains. Mr. Johnston, near Geneva, N. Y., has used it to good advantage on his wheat fields.

It is important to obtain good seed. Shrunken and light grains cannot produce as vigorous plants as those which are well filled and heavy, and any weakness or de-

fect in the plants predisposes them to disease or injury from unfavorable agencies. It is better to pay double price for perfect seed than to sow that which is very defective. Another point is to sow seed enough. If the plants stand thinly on the ground, weeds generally start up, which not only rob the wheat of its food, but render it more liable to rust. Every farmer may have noticed that if there is a blighted spot in his wheat field, it is where weeds are abundant. Two bushels of seed to the acre, broadcast, is not too much.

Very deep cultivation is not required for wheat. Land which was well tilled last year, will generally produce as good spring wheat if it is well worked over with a cultivator, as if it were plowed. Three or four inches of soil should be well stirred and pulverized, but a pretty firm substratum is favorable to wheat. It should be remembered that the earlier spring wheat is sown, provided the ground is in suitable condition, the more likely the crop will be to escape rust, and the better it will do on the whole, except in cases where it is attacked by the midge. Even where an attack from this insect is apprehended, very early sown crops are more likely to escape injury than any others, except those sown *very late*. The reason of this is, that very early crops are in advance of the midge, and very late ones behind it.

HEMP CULTURE IN THE FREE STATES.

The present rebellion is destined to work a mighty revolution in the industrial pursuits of the country, a revolution not dreamed of by at least one of the parties involved.

Many acres of land will be devoted to the culture of cotton in the border states the present season, yet it can hardly be expected that its production in the states north of the Ohio, can remain remunerative beyond the period of extraordinary prices of that great staple.

In view of the scarcity of cotton, flax is now attracting general attention among the farmers of the free States. The present high price of seed will also encourage its cultivation. For many years some attention, both in Europe and America, has been given to the preparation of this crop, as an economic substitute for cotton, yet with no decided success. But now, with the great scarcity of cotton, and the present stage of chemical and mechanical discovery in this country, it may be considered wonderful if American genius does not soon fully achieve this desirable end.

The culture of hemp in this country has been chiefly confined to the States of Kentucky and Missouri, and unlike any other crops grown in those States, the labor has been performed exclusively by slaves. The process of cutting and breaking hemp is regarded as more laborious than any other operation of American farming, and hence it has been confined to that class of labor. Machinery has been introduced for cutting, but it is employed but to a very limited extent. I have also witnessed the operation of machinery for breaking, which performed the work rapidly, perfectly, and with much less waste than when done by hand. Such machinery requires steam as motive power, and machinery generally is not adapted to the character of labor employed in those States, and hence its use is limited.

Hemp is one of the most profitable crops that is grown, and its growth exhausts the land less than that of any other. It may be repeated in the same field for a series of years consecutively, without material detriment to the soil; nothing being removed from the land but the lint; the leaves mostly fall to the ground in the process of handling, and the refuse, after dressing, is returned to the field in the form of ashes. Another advantage of its culture is, that from its dense growth it leaves the soil cleaner than any other crop.

Though hemp is less important as a great staple than cotton, yet whatever may be the result of certain movements in Missouri, touching the character of labor in that

State, its cultivation will not be abandoned there, and will, undoubtedly, be introduced as one of the leading crops of the neighboring prairie States, where *mind*, as well as *muscle*, will come in with the aid of labor-saving engines, and render our country independent of all others in this important product. With the advantages available in these states, the manufacture of bale rope and bagging may also be introduced with profit.

American grown water rotted hemp is superior in strength, and is preferred by the Government for U. S. Naval purposes to the imported article, yet it has been able to procure but a very limited quantity, notwithstanding it has maintained an agency in Kentucky for many years for its purchase. Once introduced into the free States of the great West, and I have no doubt that with the aid of machinery, and the energy and enterprise of the people, its growth and manufacture would be found highly remunerative.

To those who may be disposed to engage in the cultivation of this crop, I will give as data for calculation some reliable statistics as to the cost of production, prices, &c.

There are several varieties of hemp grown in this country. That known as the Chinese is now most largely cultivated. It was first introduced to public notice seven or eight years ago, by William L. Vance, Esq., of Woodford county, Kentucky. A gentleman from France visiting Mr. V., spoke of this variety as remarkably productive, and on his return to Paris procured at the *Jardin des Plantes*, a spoonful of the seed, and sent them to his friend in Kentucky, where its growth has been largely extended. It requires a third more time to mature than the ordinary kinds. It is usually sown a month or more earlier than the common hemp, and is not fit to harvest until some weeks after that kind is in the stack. By growing the two kinds on the same farm, the labor of the season is materially equalized. The average yield per acre, in a good season, is from 1,000 to 1,200 pounds. I have known 1,700 pounds to be produced per acre. The fibre is extremely long, rather coarse, but very strong. Besides the common variety that has been long cultivated, another kind has recently been introduced known as the Russian. Its yield per acre is about equal to the common hemp, perhaps a little less, say in a good season from 600 to 800 pounds. The fibre of this kind is much finer than either of the others referred to. It more nearly approximates to flax in its fine, soft and glossy texture, and is well adapted to manufacture into fine fabrics, as well as into cordage, &c.

The labor of preparing the ground and sowing the seed is about the same as should be given to an acre of wheat. The regular task of cutting, is half an acre to the hand, per day; yet good hands easily cut three-quarters of an acre and more. McCormick's hemp reaper with a team of four horses, will cut eight acres per day, requiring a driver, one hand on the platform and four hands to remove the cut hemp out of the way of the machine.

The task for dressing, is 100 pounds per hand per day, but as they are paid for over-work they frequently dress 150, and sometimes 300 pounds and upwards a day.

The various processes of binding, stacking, and again spreading it for dew rotting, raking it up after rotting, and shocking it ready for the break is about the labor of three days for a single hand.

The average price for dew rotted hemp in Kentucky in 1860 was \$130 per ton. In 1861 it fell to \$75. In 1862 at the close of the season, the price advanced to \$140 per ton. For water rotted hemp the price is considerably greater, governed in some degree by the ruling prices of the imported hemp.

The process of water rotting, after the hemp is removed from the stack, is considerably greater than to simply handle it in the process of dew rotting, but the price obtained is greater in proportion.

H. P. B.

An editor says he has seen the contrivance lawyers use when they "warm up with the subject." He says it was a glass concern, and holds about a pint.



Fig. 7.

which exhibits the *Loasa pentlandica* trained among vertical rods, thrust into the soil of the pot.

Climbers should be sparingly introduced into ornamental grounds, except it be in the more remote and less formal and finished portions. They give too much an air of wildness and freedom to be adapted to the front of large residences, but for small cottages, may be placed almost anywhere, and give a beautiful appearance when trained over windows, or on latticed verandas. It should not be forgotten that to give them their best appearance, the ground should be rich, and well dug or cultivated.

SCOURS IN SHEEP.

EDS. COUNTRY GENT.—I have long known a sovereign remedy for scours in sheep, and I thought it might benefit some of your numerous readers, to make it known through the medium of the COUNTRY GENT. Take from four to six inches of a common tallow candle—our candles weigh, which we run or dip, about twelve to the pound—open the animal's mouth with the head raised, and push it well down her neck, and if other sheep are like mine, the disease will be arrested at once. It has long been known that white paper boiled in milk is a very effectual remedy for the scours in horses. So I suppose the cotton wicking given with the candle would have no bad effect. A little over a gill of melted lard will cure the blind staggers in sheep or bloat; and I think it a better remedy for the stretches than holding the sheep up by the hind legs and jerking her, as has been recommended by some writers. I never lost a sheep by that disease, and the only remedy I ever used was the melted lard.

Mt. Vision, N. Y..

W. B.

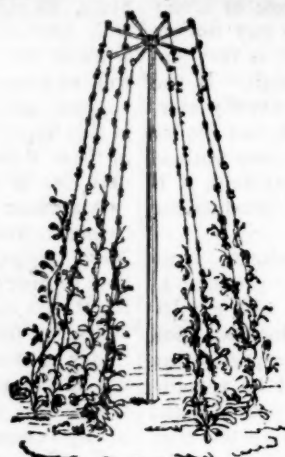


Fig. 6.

SUPPORTS FOR CLIMBERS.

(Continued from page 120.)

A rustic support of the simplest kind is made by cutting a small cedar tree in autumn, so that the bark will adhere to it, and cutting off the side branches within a foot of the stem. It should be about three or four inches in diameter, and eight to twelve feet high. The appearance of such a support as this, when well covered with verdure, is shown in fig. 5.

Supports for climbing annuals may be of less substantial structure. Fig. 6. exhibits one of a neat character, well adapted to the training of the cypress vine, or morning glory. It consists of a central upright rod, with radiating sticks at the top, from the ends of which cords are extended downwards and secured to wooden pegs at the bottom.

Climbing flowers in pots may be variously supported by rods or wire structures. One of the simplest of these is represented in the annexed cut, fig. 7,



Fig. 5.

These cords will last longer if painted, oiled or tarred.

A Good Way of Wiring Fence Stakes.

Anneal the wire as you would heat cart tire for setting. With a string measure around the stakes, then measure the wire, mark with a file and break it off. Put it around the stakes, bind the ends together, grasp them with a monkey wrench or blacksmith's tongs, and twist two or three times.

E. A. P.

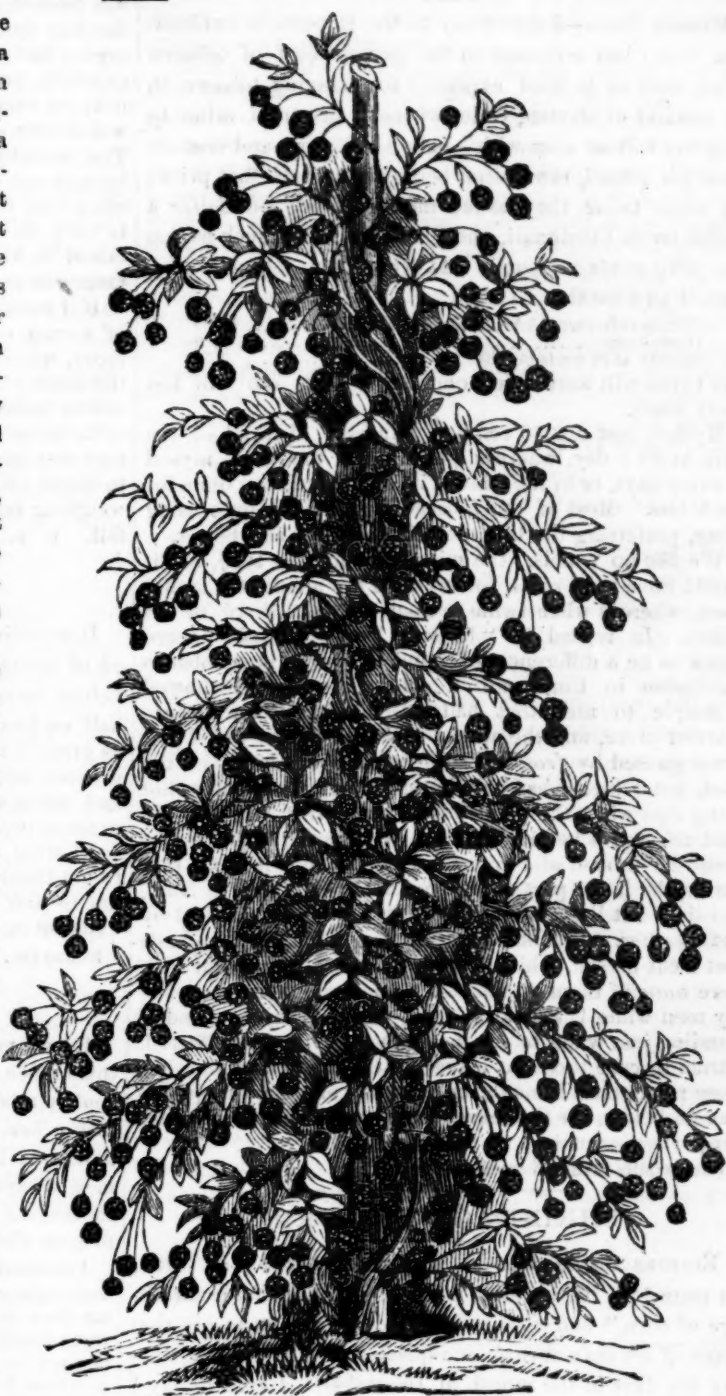
How to Destroy Cockroaches.

A correspondent of the Montreal Witness says—"Several weeks ago my house had become so overrun with cockroaches that I seriously intended leaving it for two or three nights, to give these pests the benefit of a good freeze. I happened, however, to read in the Witness that powdered borax was a cure for them. It was tried and proved efficacious. Now and again, a stray cockroach is seen, but certainly not one where there were hundreds before. Those that make their appearance have a sickly, attenuated look. Their air is so dispirited that the simile "lively as a roach" could never apply to them. The borax is used by sprinkling upon shelves and wherever the enemy "most do congregate." It is a safe remedy and one that deserves to be known."

MINER'S SEEDLING BLACKBERRY.

Mr. H. B. MINER of Honeoye Falls, Monroe Co., sends us the accompanying drawing of a blackberry plant in bearing, grown by him from the seed. "Those familiar with wild blackberries," writes Mr. M., "know that there is a low or trailing species, sometimes called Dewberry, the *Rubus Canadensis* of Linnaeus, that bears fruit exceedingly rich and luscious; but the plants are very shy bearers, many of the berries are only half formed, while some plants are entirely barren. Although the bushes or vines may be quite abundant, it is not often that a quart can be gathered." He has therefore been endeavoring for many years to grow plants of this species from seed, that would retain the quality of the wild ones, with greater productiveness; and after raising hundreds, thinks he has succeeded in obtaining two that meet his wishes. "One of these is about two weeks earlier than the other, the early one being the highest flavored, but a portion of its berries are sometimes imperfect. The quality of the fruit is excellent; * * * the berries a little smaller than the *Lawton*, and nearly of the same form, though perhaps a little more oblong. Both varieties produce abundant crops, many plants giving over two quarts. They ripen evenly, and therefore will not last a long time. They are gathered more easily than the raspberry, and for this reason will be a favorite with those who, while they like the fruit of the blackberry, dislike its ugly thorns."

The Trailing Blackberry has long and slender branches, that run along the ground or over any object that may be near, and root at the points, like the Black Cap Raspberry. Mr. Miner allows these to run at will until near the autumn, when, if new plants are not wanted, the points are cut off, leaving the canes some six feet in length. In the spring, a heavy stake five or six feet long, is driven into the ground, for each hill or plant, (and they may be set from three to four feet apart.) The branches are then gathered together, wound around the stake like a rope, and fastened at the top with a string. The fruit is borne on long, slender stems, which, with the foliage, make a beautiful pyramid, the berries being on the outside, and fully exposed. The next spring the old canes must be cut away, and the new shoots wound around the stake and fastened as before.



DRILLING WHEAT.

Messrs. Eds.—G. H. S., in yours of 2d April, asks if wheat will do well sown in drills like beans, beets, &c. In September, 1860, I sowed six or eight varieties of winter wheat in drills—the rows about 12 inches distant and 50 feet in length. I am satisfied the yield was much greater than if sown broadcast. The ground between the rows was hoed, and the weeds kept down. In the fall of 1861 I received a small amount of the Lancaster wheat, from Col. Boyd, of Maryland. The envelope enclosing the seed got broken, so that a portion was lost before I received it. From the seed sown, just one ounce, I harvested last July twenty ounces. We had a long spell of wet, stormy weather while the grain was in the milk, consequently the straw was some rusted, and the grains a little pinched—otherwise I think I should have gotten a yield of 25 fold. I have recently received a sample of very fine spring wheat from the Department of Agriculture, a por-

tion of which I shall sow in drills, and the balance broadcast. This will show which yields the most and ripens soonest.

L. B.

A GOOD APPLE TREE

A correspondent of the Genesee Farmer gives an interesting account of a Greening apple tree standing in a garden in Washington county, N. Y. When it came into Mr. Cooley's hands, in 1841, it had borne only occasional crops of apples, its pruning and cultivation having been neglected. It was cared for, and given clean and frequent culture and an annual manuring. The first crop was fifteen bushels, the least quantity it produced during the next twelve years. Twice during this time it gave a crop of fifty bushels per year; in 1850 thirty-five bushels. In 1854 the place was sold, the new owner gave the tree no attention, and in 1856 it did not yield two bushels of apples, and those were of inferior quality. These facts teach a lesson the dullest cannot fail to read.

CUTTING AND CURING TOBACCO.

MESSERS. EDS.—I would say to Mr. Roberts in explanation, that I had reference to the present cost of tobacco twine, such as is used expressly for hanging tobacco in the vicinity of Dayton, Ohio, where I procured mine to hang my former crop with—before the war—and cost 33 cents per pound, raw cotton being about half that price; the same twine they asked me yesterday *one dollar* a pound for in Cincinnati, and for hemp twine, such as you use, *fifty cents* a pound. At your own estimate of 8 pounds an acre the

Cotton twine would be.....	\$8.00
Hemp twine.....	4.00
700 lath at 50 cents per 100.....	3.50

The twine will answer for once using, the lath will last many years.

My lath cost me 50 cents a hundred. I hired all the work at \$1 a day, whereas, had I done the work myself on rainy days, or in the winter, it could have been done for much less. Most of our tobacco raisers have quit using twine, preferring the lath, as being cheaper and better.

We use no "nails," the mistake is in the type, for it should have read *rails*, for my rails are about 45 inches apart, whereas when twine is used only about 16 or 18 inches. In regard to "fat stem," or "fat leaf," there seems to be a difference of opinion; being in a tobacco warehouse in Cincinnati a short time ago, I showed a sample to men that had raised tobacco for twenty years or more, and the almost universal answer was "that it was caused by frost after the tobacco was hung in the shed, but before it had cured or dried out, those leaves not being ripe when the plant was cut, and that had not the frost affected it before the leaf was cured, those leaves would have been of a greenish color." We had no rain during the latter part of the summer or fall, until in Nov., and then but little, so it could not have been caused by wet weather. I coincide with their opinion, for the plants that I cut myself, which were ripe according to your test, were none of them so affected, and those plants cut by my men while I was away from home—they not understanding just when to cut it—were more or less affected. I tried to cure those fat leaves by the heat of a stove in a close room, but although they got *dry* enough, the quality was no better, for the leaves had the appearance of oiled paper (transparent.)

Twenty Mile Stand, Warren Co., O.

E. M. S.

SHRINKAGE OF CORN.

EDITORS CO. GENT.—In your paper dated Feb. 19th, on page 129, the question is asked—"What is the shrinkage of corn," and your correspondent goes on to say that some of his corn shrunk one-quarter or a little more, during ten days in the month of December. I wish to say I husked a few ears of corn about the middle of September last, and dried it in the sunshine. I then shelled it and weighed, and also measured the corn very carefully. I then spread the corn to dry, using great care not to lose any of the kernels by mice or other accident, and after eight days I weighed it again, and it had shrunk a little over one-quarter part. I then measured it and found one-quarter part by measure gone. This was September 22d, and from this date to Feb. 14th, the corn neither gained nor lost one-sixteenth part of one ounce. I intend to keep this corn another year, and see what it will then weigh.

Another experiment.—On the 17th of September last I selected from my corn-field eight good ears of corn, and they weighed on the cob 6 lbs. 3 ounces and 15-16ths of an ounce. They now weigh, (Feb. 23d,) 3 lb. 13 oz. and 15-16ths of an ounce. I also selected from my neighbor's cornfield, eight of his best ears, and they weighed on the cob Sept. 17th, 4 lb. 10 2-16th ounces. They now, (Feb. 23,) weigh 2 lb. 14 9-16th ounces, showing a shrinkage of nearly one-half, and I don't think any of the kernels are gone.

I tried one more experiment. My corn raised in 1861, was husked and put in the crib in the barn as usual. On the 31st day of March, 1862, it was threshed and I measured a half bushel of it carefully, and also weighed it carefully, put it in a bag and hung it up, and the bag has not yet been untied. I weighed it often, and found it was drying away a little every week until the 31st of May. The shrinkage was then not far from 3 per cent. or 3 bushels out of 100, in the two months of April and May. Since that time it has gained a little in weight. I intend to keep this also another year. I have one ear of corn raised in 1858; it was then 15 inches long, but it now measures only 13 1/4 inches; it has never been weighed.

If I remember rightly, I have never seen any account of a crop of corn which yielded 90 bushels per acre or more, which was weighed or measured later than Dec. of the same year; and if it is a fact, (as the above experiments seem to prove,) that corn does shrink one-half or so in six or eight months after being harvested, then the true way to find the quantity of corn yielded per acre, is to throw off the green weight, (as the butchers do in weighing beef,) if the crop is measured or weighed in the fall. C. B. Near Springfield, Mass., Feb. 23 1863.

TOPPING CARROTS.

It sometimes happens that an apparently so ovenly method of doing a thing may be the right way. A short time before harvesting carrots, I put a lot of cows on the piece half an hour each day, to have the tops eaten off, which, as grass is then short, is done effectually, even with the ground, to the great advantage of the cows, the fall labor, and no injury to the carrots—rather an advantage, because it prevents their growing in the cellar.

Plowing, spading, or any usual method may be adopted to get them out of the ground; nothing farther to be done but to pick them up and store them—thus saving much expense in raising this useful crop. L. WELLS.

Brome Co., C. E.

REARING TURKEYS.

I don't propose to give anything like a recipe for doing this branch of business, as I have never been an expert at poultry raising. When a boy I used to notice that when a turkey hen, or in fact any of the fowl kind, stole away their nests, and laid and set without being molested, they almost always brought off a good brood of young, and if left to themselves, would usually rear them better than if allowed to come about the house.

I account for the difference in this way: In the first place their eggs are not hurt by being handled, and as soon as they are done laying, they go immediately to setting, and further, when nesting away from other fowls they are not as liable to be overrun with vermin, as when nesting about the hen-house or where fowls are constantly sitting or nesting. If hatched away, they are usually a little timid for a while, which prevents them from getting lousy from contact with other fowls, &c. My practice with turkeys the last few years is to set a part of the eggs under hens, and a part under turkeys, about the same time, and when hatched give them all to the care of the turkey hens to raise, and let them have their liberty, unless the weather is very wet. This remark applies to the first laying in spring; the second laying they usually lay no more than they can cover themselves, and are allowed to sit and rear what they can.

Many object to raising turkeys, thinking they are more destructive than other fowls. I think this is not the case, all things considered. It is true they will use up cabbage and tomatoes if allowed among them. So will other fowls. There is one advantage in rearing them, they get a large amount of their feed farther from the barn than other fowls, a large amount of which would otherwise be wasted but for them; they will destroy more grasshoppers, and other insects that are a pest to the farmer, than any other fowl; and, last but not least, they give good cheer to many a holiday repast. I can't understand why the farmer cannot raise one hundred pounds of this kind of flesh as cheaply as any other meat used in the family, and certainly they do their part in furnishing the cash to fill the pocket. A. MOSS

OSAGE HEDGES.

You would greatly oblige a subscriber, by giving some practical hints in your valuable paper, relative to the management of Osage Orange Hedges—how to prepare the ground—what the proper age of plants—how close should they be planted in row, and which is the best, single or double rows?

J. W. G.

Adams Co., Pa., March 7, 1863.

The Osage plant requires a dry subsoil, and if it is not already dry enough, an underdrain should be placed nearly under the line of hedge, or within a few feet of it; this not only prevents the plants from being lifted or killed by frost but renders the hedge hardier, and better able to withstand winter. If the soil is not wet a broad plowed ridge 10 or 12 feet wide will answer. One year plants are about as good as any—two year require more care in setting, and make a hedge a little the soonest. Gaps are the worst thing for a hedge—therefore let the buds swell a little before setting, that all may be seen to be alive and vigorous. One great secret of success is constant, clean cultivation on both sides 4 or 5 feet wide. After growing a year or two, cut down freely, and treat as is usual for cutting back hedges. Single rows are better than double, as the young hedge may be more easily cultivated and cleaned. Six or 8 inches is a common distance but some prefer a foot or even a foot and a half, believing that the plants with more room will be much stronger, and by proper cutting fill up the spaces well. We are inclined to think this is true; but experiments are needed side by side, for a term of years, to prove the relative value of each mode.

HOW TO HAVE CLEAN GARDENS.

MESSRS. EDITORS—In Co. GENT., page 91, S. W. Hall says, "Why the weeds in my garden have actually forced me to abandon it and plow it up to kill the young grass, while my fields are clean." And, "four dollars will do all the hand work necessary on an acre of carrots."

It seems to me marvelous that the skill that produces such results in the field, should be driven from the garden by weeds. But judging from my own observation, his is not a solitary case, and I propose to inform all such unfortunates, how to conquer the weeds instead of being conquered by them. Many years since my own garden had become by neglect (and by the way, farmers are very apt to neglect their gardens,) so foul as to require more labor than the vegetables raised on it were worth. After some reflection I came to the conclusion that such a state of things was unnecessary, and that hereafter no more foul seed should be raised on it, or carried on it with manure. Accordingly for convenience in hoeing I planted most of the vegetables in drills, and buried all the weeds of much size between them. Well, by great labor I kept them under that season, but the next summer there was not one weed less than usual. This I had expected, knowing that small seeds may lie buried an indefinite length of time, and yet vegetate freely when brought near the surface, so as to be exposed to air and heat. After the second summer the number began to grow small by degrees and beautifully less, until in a few years the weed crop was among the things that were, and since then two or three hoeings in a season are all that are required to keep them under, although more frequent stirring of the ground is beneficial to the vegetables. From the aforesaid experience, I deduce the following rules:

First, hoe early. Weeds when first up are very tender, but when large, many will live unless buried, but if buried when fresh will decay before another hoeing becomes necessary. Continue the hoeing through the season, or as long as weeds grow. A few weeds allowed to go to

seed, will stock a large garden. Purslane in particular, one of our most troublesome garden weeds, has a multitude of seed, and ripens it while the capsules are still green, and many a cornfield has been stocked with it by manure from the hog-yard.

Second. Put no yard manure on the garden that has not been thoroughly fermented. Hen manure, guano, phosphate of lime, ground bone and wood ashes are all good, but poudrette is better than either of them singly, and every family should manufacture their own. Nothing more is necessary than to mix *intimately* with the contents of the privy a sufficient quantity of some suitable absorbent, such as coal ashes, clay, swamp muck or charcoal dust, which should be dry, and are improved by the addition of gypsum. To facilitate the operation, I have so constructed my privy that whenever a lid is closed a given quantity of absorbent is deposited underneath, and besides answering the purpose intended, it operates as a disinfectant, allaying the unpleasant odor of the premises to such a degree as in my opinion to pay for all the trouble and expense, if that alone were the object. W.

Improvement of Vegetable Productions.

MESSRS. EDITORS—That the various productions of the vegetable kingdom are susceptible of almost unlimited improvement, by judicious and continuous selection and propagation of superior seeds and plants, is as true as that the valuable characteristics of all our domestic animals have been attained by requisite care in breeding and management for many years, and is an object whose development would equally, if not more extensively, promote the agricultural and general interests of any people or country.

While the assiduous efforts of a few have resulted in the production and dissemination of many new and rare vegetables, fruits and flowers, the general and concurrent efforts of agriculturists would achieve incomparably more valuable modifications and improvements of the manifold productions of the soil.

This improvement does not consist only in the production of *new varieties* by hybridism, but *especially* in the *modification and improvement of the great variety now under propagation*.

My rule is explicit, as follows: Select seeds or plants for reproduction which possess characteristics in point of productiveness, earliness, large size, good quality, or any other qualification desirable to perpetuate, give thorough cultivation on rich soil, and you are on the road to *improvement*. Learn the rest by experience.

Yaphank, Suffolk Co., N. Y.

ISAAC T. WHITBECK.

Fence Posts—Time of Cutting and Setting.

On three occasions, in different years, I have cut second growth White Ash trees in June or July, when the bark would peel off very easily—took off the bark and set them immediately, and in each case the posts have lasted 12 or 14 years. I have also cut the same kind of timber in the winter, in several different seasons, and set the posts the next spring, and I think I have never in these cases, had them last over five or six years. They generally rot off in three or four years.

Query.—Would the result be similar with any other kind of timber? Will those who have tried it answer?

East Dorset, Vt.

D. G. W.

Good Substitute for Coffee

MESSRS. EDITORS—On Long Island the following has reputed excellence as a cheap, palatable and healthful substitute for coffee:

Wheat bran moistened with warm molasses, then dried and browned by the fire. Boil and serve as other coffee, but without further sweetening.

To those who are dyspeptic, the aperient property of the bran would be very beneficial. ISAAC T. WHITBECK.

The True Cause of the Potato Disease.*

BY PROF. S. W. JOHNSON.

Having endeavored to convey to the readers of the Co. GENT., the well and repeatedly observed facts upon which is based the conclusion that the fungus designated by botanists as *Peronospora infestans*, is the immediate and only cause of the potato disease, it remains, in the next place, to point out the harmony of this conclusion with the facts familiar to every one who cultivates potatoes, and finally, to indicate the means of checking or suppressing the ravages of the disease as far as this is, at present, practicable.

It is universally observed that the leaf-blight and the rot attack the potato most destructively in localities where the atmosphere and the soil are most liable to be impregnated or saturated with moisture. Hence we find that low lands, lying along a stream and sheltered by forest or hill, are visited by the disease when more elevated and airy positions escape. Potatoes on a hill are often unaffected, while those of the same kind in a valley a few hundred rods distant, are totally destroyed. In dry seasons, especially in those which are dry in August and September, the disease is less prevalent than in wet years. When sultry, showery weather succeeds warm and dry days, or when by a storm the air is rapidly cooled, so that heavy dews or fogs supervene, and evaporation is checked, it often happens that a field, healthy to the ordinary observer at night, is black and ruined in the morning.

This influence of moisture may be exhibited in the following manner, at any time when potato tops are at hand, on which, though their appearance is fresh and healthy, by close inspection may be found minute patches of the fungus. Two portions of such infected foliage are taken, and the stems of each placed in the neck of a glass or bottle containing water. One portion is exposed freely to the air, the other is covered with a bell-glass. Other things being equal, it will be seen in these few hours that while the exposed foliage has not perceptibly altered in appearance, that which is under cover exhibits a large growth of the brown fungus-stains, and in a day or less, is black and blasted.

De Bary found that very high temperature is of less influence in developing the fungus, than an atmosphere saturated with moisture. The *Peronospora* grew with equal rapidity at temperatures of 65° and 80°, when the air was fully charged with vapor.

The fact that the conditions which develop the potato disease are precisely those which produce the fungus, is in harmony with and a consequence of the theory we believe to be the true one.

J. G. W. of Utica, in the Co. GENT. of Feb. 19, attacks the fungus theory with great spirit and vigor. He exerts considerable rhetoric against those "who deal with nature under bell-glasses," makes fun of trying an *experimentum crucis* on a piece of dead and cut potato, and throughout so travesties the fungus theory, or rather the plain statements on which it is based, that they are absurd to anybody. But J. G. W. offers no facts to rebut this theory. He does not tell us of a single observation which disproves the statement that the fungus always precedes the leaf-blight and the tuber-rot, and that the leaf-blight and tuber-rot always follow the fungus. He does not stop to reflect that this statement is the result of oft-repeated observations made during six years by Speersneider, De Bary,

and Kulm, all skillful physiologists. He offers no evidence that an *experimentum crucis* cannot be made elsewhere than under the open sky. Through half his article, while he ridicules effectively, he does not reason at all, and when at last he begins with logic, it were better had he kept to rhetoric.

"As if the world did not know," he says, "what evidently the German did not know, that if two rows of potatoes planted side by side—nay of two potatoes planted in the same hill, one of a delicate and the other of a hardy variety, a Blue Mercer and a Garnet Chili for example, the one shall be perfectly sound and the other perfectly rotten." This may be a stubborn fact for the fungus theorizers. But it is not more inexplicable than some others known, very likely to the aforesaid German. I have seen, of two rows of potatoes planted side by side—nay of two potatoes planted in the same hill—one perfectly sound and the other perfectly rotten, and both of the same variety! It is not uncommon that a streak or well defined patch in a field is diseased, while the remainder is what would be called by most out-of-door philosophers, perfectly healthy.

It is very common to dig from the same hill sound and rotten tubers, and I have dug from a hill an upper stratum of rotten potatoes, and a lower one of sound ones. I can't conclude, as J. G. W. does, that "in these cases the sound potatoes stood the same chance of meeting the fungus spores in their descent, as the decayed ones." If an angler by throwing his hook into the stream, catches a shiner, it does not necessarily follow that every time he throws it in he will take a fish, much less that he will shortly depopulate the brook. Where he takes shiners in quantity, he may fail to secure a solitary trout, although the latter fish is abundant, and when in the mood is not averse to bait.

There is no kind of fish but what will take a bait, and it is equally true that there is no kind of potato that is not more or less susceptible to disease. The Garnet Chili and some others of Mr. Goodrich's seedlings have exhibited a great power of resistance to the rot, but even J. G. W. does not affirm that this variety is totally exempt from disease. J. Talcott, who cultivates the Garnet Chili at Rome, but a few miles from Utica, reports that with him they have rotted for three years, last year 20 bushels out of 180, "being affected more or less, so that they are not fit to use."

In Germany Dr. Klotzsch in the year 1850, produced a hybrid seedling by impregnating the flower of a "right vigorous" potato with pollen from the *Solanum utile*, a species differing from the ordinary potato *Solanum tuberosum*, in having an aromatic fruit (seed ball.)

This so-called Bastard potato had hardy qualities similar to those possessed by Mr. Goodrich's seedlings. In 1856 it was entirely unaffected at Berlin, when all other varieties were totally overpowered by the disease. Dr. Schacht, the eminent Botanist, says of this potato that "the foliage is firmer and the cuticle of the stem and leaves, which in the common potato is extremely delicate, is thick and beset with wart-like prominences. The tubers have extraordinary solidity, and the cell partitions are much thicker and stronger than in the common potato."

Here we have an example of a potato capable of withstanding the rot, when other kinds were badly damaged, and the reason of its hardness is to be found in the great resistance opposed by its firm tissues to the boring of the

* Continued from page 141.

fungus. Dr. Klotzsch was of the opinion, when he produced this seedling, that the renewal of constitution occasioned by raising from seed, was the secret of its immunity from the rot, but this idea had to be abandoned, for in 1856, Dr. Ludersdorff informs us he saw this potato infected with the disease. In Germany other kinds of potatoes are known, viz.: Ockel's Rio Frio, the Onion potato of Saxony, and the Green or Heiligenstadt potato, which have shown an uncommon power of resisting the rot. The last mentioned is recommended as especially adapted to wet and heavy soils; but is unfit for table use. De Bary however affirms for Germany what we have yet to learn to be untrue for this country, that no kind of potato is capable of absolutely withstanding the disease. Those varieties which, from the fact of being thick-skinned or deep-rooted, are less liable to destruction, do nevertheless succumb to the rot, under circumstances that are eminently favorable to the development of the *Peronospora*.

The theory that the grape and potato disease is the result of a stagnation of juices, resulting from cold damp, or hot damp changeable weather, is as old as Hales and Parmentier. The idea that it attacks some varieties more easily than others, because these have become enfeebled by irrational culture, or by excessive tuber propagation, has had its vigorous advocates in this country and abroad. Both theories are wanting in any real support. The stagnation of juices is a mere intangible fancy. No one can define it. The circumstances which are said to produce it, often do not. If a close steaming atmosphere stagnates juices, why are hot-beds and hot-houses tolerated for an instant? If stagnation induced in enfeebled plants is the cause of the potato disease, why did not all the old fashioned enfeebled varieties suffer at once and equally? If the Mercer and Peach Blow are enfeebled, how is it that superb crops of them are yearly obtained? The "constitutional weakness" is simply a phrase, by the use of which we conceal from ourselves and our neighbors the extremity of our ignorance. The sole evidence of this weakness is the fact that potatoes rot. But if a variety is enfeebled, the *variety* should perish, or if it is renewed by proper treatment, it should then resist the disease. It is not physiological to see a large crop of fine tubers one year, a crop of diseased ones the next, and a large crop of sound ones the third year, propagated on the same farm, from the same parent tubers, and of the same enfeebled variety.

Why should the enfeebling of hundreds of varieties of potatoes, which for generations had invariably maintained their excellence and given satisfactory crops, have culminated in disease in the year 1843—the crops being still admirable as to quantity in that very year?

The theory that continued propagation from the tuber weakens a plant, is not sustained by any direct observations or experiments, but is arrived at in the following circuitous and illogical manner. The fact is observed that potatoes rot, grapes mildew, and other plants suffer from blight or rust. Without any adequate study of the disease itself, the hypothesis No. 1 is set up that these plants suffer because they are enfeebled and incapable of resisting atmospheric vicissitudes which do not disturb healthy plants. To account for this *imagined* debility of constitution, hypothesis No. 2 is invented, viz.: that propagation by tuber, layer, cutting, bud or something else than seed, weakens a plant. The whole theory is baseless.

I am aware that certain phenomena have long been currently accounted for in this manner. The wretched state of the Lombardy poplar in this country, is attributed in our older botanical works, to the fact that we have but one sex of that dioecious tree with us; no seed is therefore produced, and propagation being continued by cuttings, the tree is asserted to have "run out." This doctrine has been accepted without adequate criticism, and is opposed by all the experience of the fruit and flower culturist.

What variety of grape, rose, dahlia, or other plant that has been continued in existence for years, or even cen-

turies by other than seed propagation, has run out or begun to run out from that cause? The advocates of the theory of "constitutional weakness" may be safely challenged to produce a single fact that unmistakably sustains their doctrine. The failure of the Garnet Chili to withstand the rot, has settled the matter for Mr. Talcott, and ought to for J. G. W. The latter will allow me to say that if anything that he or I have caused to be printed in the COUNTRY GENTLEMAN, deserves to be characterized as "altogether too visionary, fanciful and far-fetched," or as "arrogant, not to say absurd," to my mind it is that pet theory of his, the distinguishing character and peculiar excellence of which is "constitutional weakness,"—the Pelion of unreason piled on the Ossa of conjecture!

The doctrine we combat, not only lacks the merit of truth, but it has all the virus of falsehood. It not only leads to wrong conclusions, but it leads away from correct results. Propagation by tubers, layers, offsets and buds is not only not enfeebling, but is as natural and therefore as healthful under proper conditions as reproduction from seed.

More than this, the vine dresser and horticulturist know that these methods of propagation, skillfully combined with scientific culture, are in many cases means of attaining excellencies of character and constitution that mere seed reproduction does not readily admit of.

We must not suffer ourselves to be misled by apparent or shallow analogies. The bane of vegetable physiology has been, and to a great degree still is, the assumption that plants are in this or that respect like animals. The "circulation of the sap," its "elaboration in the leaves," the "stagnation of juices," are specimens of ancient speculation that infest our text-books in the school, and our hand books in the orchard or vineyard.

They are the scape-goats of learned ignorance, the last resort of wisdom that is never at a loss to render a reason. They serve the pseudo scientific cultivator the same office which Semmes' Hole performs to the stay-at-home Arctic Explorer—are an inaccessible and bottomless pit, large enough to engulf all difficulties.

The other objections raised by J. G. W. to the fungus theory, remain to notice. The first difficulty he suggests is, that two kinds of potatoes are unequally affected. We explain this, as has been intimated, by the fact that the cuticle and cell tissue of the hardy kinds are thicker and denser than in the delicate varieties, as Schacht has observed in case of Klotzsch's Bastard.

The second difficulty suggested by J. G. W. is, "that potatoes grow and are dug and are rotten in seasons so dry that the earth is never wet down so far as the potatoes in the hill. Especially does this absence of wet often exist during the interval between the appearance of the disease upon the leaf and upon the tuber." De Bary distinctly states that the spores penetrate a *moderately* wet soil. A slight rain or heavy dew succeeded for some time by cloudy close weather, which hinders the drying of the surface, probably provides the conditions necessary for the fungus to reach the tubers. If the fungus is *in* the tubers, it can't well be doubted that it in some way reached them, although the precise mode or conditions of access be imperfectly understood. The fact which I have observed, that deep lying tubers may be perfectly sound, while shallow ones of the same kind are entirely rotten, accords with the supposition that the spores penetrate easily to some depth, but do not pass beyond a certain limit.

As to the rotting in the cellar, of potatoes which at the time of digging were *apparently* sound in tops and tubers,—this would happen if the plants were moderately infected at harvest, and then were carried into a damp cellar, especially if the tubers were thrown into large heaps or placed in deep bins. The fungus spores did undoubtedly remain concealed and inactive in the tubers, until placed in the cellar. One or two other questions remain which I do not attempt to answer, as the facts implied in the questions, upon rigorous examination, might not be found to exist.

Sheffield Scientific School of Yale College, March, 1863.

[For the Country Gentleman and Cultivator.]

**Four Months Experience in Poultry-Keeping,
by a City-bred Lady.**

We give the following as the result of keeping poultry, as experienced by a city-bred lady, on retiring to the country:

"We commenced," said she, "stocking our poultry-yard in July, by purchasing twenty-eight chickens and twenty ducks, for which we paid sixteen dollars and twenty-eight cents. Some of them were too young for the table at the time we purchased them, but were all consumed at the end of four months, with the exception of seven hens and a cock which we saved for stock. Thus, in the time I have mentioned, we killed twenty ducks and the same number of fowls. These we entered in our house expenses a \$1.37½ a couple, though they were larger and better than could have been purchased in the New-York market for \$1.75.

"We must now proceed to reckon what they cost for food, and then see if any balance remained in our favor. They consumed during the time they were getting in order for the table, three bushels of corn at one dollar per bushel, one and a half hundred corn-meal at one dollar and thirty-three cts., and one hundred weight of broken and refuse rice at three dollars.

Cost of corn and meal, was.....	\$5.00
Broken or refuse rice.....	2.00
Fowls and ducks.....	16.58

Total.....	\$24.58
Ten couple of ducks and the same number of chickens would amount to.....	\$27.50

"Thus at first sight it would appear that we gained but \$2.92 by four months trouble in attending to our fowl-yard; but we have now to take from the purchase money the value of the eight saved for stock, and likewise deduct from the food they consumed in four months. Now these eight were large fowls when bought, and worth fifty cents each. We must allow for their feed at least one-fourth part of that consumed. We have then to take off four dollars from the first cost of the poultry, and two dollars from the value of the food, which will add six dollars to the two dollars and ninety-two cents, leaving on the whole transaction a profit of \$8.92.

"We still have another small item to add. One of the hens we saved, commenced to lay, and by the time the four months were expired, had given us three dozen eggs, which at that time of the year were not to be had short of twenty-five cents the dozen; so that we have to add seventy-five cents to \$8.92, making a clear profit in four months of \$9.67.

"It was a source of great amusement to ourselves, as well as to the children, by whom it was always considered a treat to run in the field or yard, with corn in their little baskets to feed the little 'biddies.' When we first had the poultry we kept them in the stable yard, but we soon found they did not thrive; they had been taken from a farm where they had a free range of the fields, and drooped in confinement and from want of the grass, worms and insects, which they had been accustomed to feed on. We had a house constructed for them in the lot nearest the house, and soon found that they thrived much better, and did not require so much food. We had no trouble with them, except in seeing that the house was cleaned daily. Through the fields flowed a stream of pure water; consequently our ducks thrived well. The meal which figures in our account was for them; they used to have a little mixed in hot water once a day. We soon left it off, for we found the rice boiled in skimmed-milk was equally good for them, and much cheaper.

"Poultry of all kinds are very fond of offals of the table; the children were always told to cut up pieces of potatoes, greens or meat, which they might leave on their plates at the nursery dinner; and when they were removed to the kitchen they were collected together and put in with the rice for the chickens. We always fed them three times daily; in the morning with rice, in the middle of the day with the scraps, (offal,) and in the evening they had just as much corn thrown to them as they cared to pick up eagerly.

"We have heard some persons complain of the great expense attending a poultry-yard, but this arises from the person who has the charge of them throwing down just as much again corn as the fowls can consume. We ourselves often saw corn trodden into the earth, if occasionally we left the task of feeding to the lad.

"It must, of course, be impossible for a lady to go into the field for the purpose of feeding the fowls; the only plan to prevent waste is to have a meal-room in the house, and as

much given out daily as is considered necessary for the consumption of the poultry. This is some little trouble, but will be well repaid by having at all times cheap and wholesome fowls, etc.

"We have hitherto only spoken of the profit which may be obtained from a poultry-yard, when the stock is purchased. The farmer from whom we bought ours, of course gained some money by their sale. When we raised our own chickens from our own eggs, we received much more emolument from our own yard; but it is my purpose to show how a person should commence, who leaves a city for a country residence." C. N. BEMENT. *Bennington Centre, 1863.*

Waterproofing Boots and Shoes.

The Irish Farmer's Gazette gives the following recipe:—
"Melt over a slow fire 1 pint of linseed oil, 3 oz. bee's wax, 3 oz. Venice turpentine, and 1 oz. Burgundy pitch. Warm the shoes before the fire, and rub them well with the above mixture, warmed till in a semifluid state, with a painter's brush, repeating it till the leather will absorb no more."

Sorghum Syrup for Cooking.

In making ginger bread with sorghum molasses, mix the soda with the molasses; then warm, stir till light, then mix with flour in the usual way, which will make light bread.

A SUBSCRIBER.

Excellent Whitewash.

As the house cleaning time will soon be here, it may not be amiss to say a few words in regard to whitewashing. There are many recipes published, but we believe the following to be the best that can be used: White chalk is the best substitute for lime as a whitewash. A very fine and brilliant whitewash preparation of chalk is called "*Paris White*." This we buy at the paint stores for three cents a pound, retail. For each sixteen pounds of Paris White, we procure half a pound of the white transparent glue, costing twenty-five cents (fifty cents a pound.) The sixteen pounds of Paris White is about as much as a person will use in a day. It is prepared as follows:—The glue is covered with cold water at night, and in the morning is carefully heated without scorching, until dissolved. The Paris White is stirred in with hot water enough to give it the proper milky consistency for applying to the walls, and the dissolved glue is then added and thoroughly mixed. It is then applied with a brush like the common lime whitewash. Except on very dark and smoky walls and ceilings, a single coat is sufficient. It is nearly equal in brilliancy to "zinc white," a far more expensive article.

SORE MOUTH IN SHEEP.

MESSRS. EDITORS—In answer to an inquiry in a late number, respecting the sore mouth in sheep, as far as I can learn, it is what I call canker in the mouth. What is the cause I cannot say, but should not think buckwheat straw could be the cause of it, although I should prefer not using such for litter. I had a few cases of canker in the mouth in the fall of 1862—got it by taking ewes into the ram. My remedy is to get a little alum and dissolve it in pure spring water, and with a sponge, or a small portion of cloth, dress the parts affected twice a day, and I soon found it to effect a cure.

I believe it is a little contagious, but at the same time do not think it a dangerous disease. It annoys the sheep very much if not stopped in time. JOS. KIRBY.

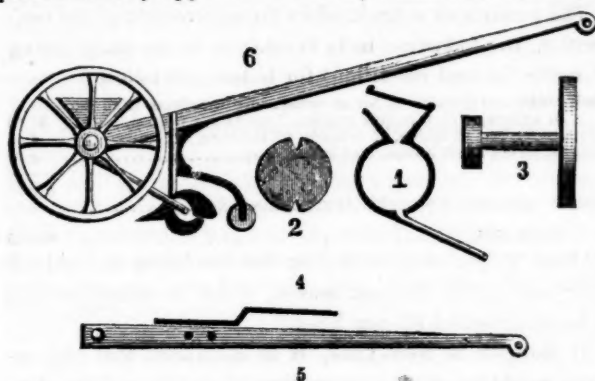
Norval, C. W.

Preparing Potatoes for Planting.

MESSRS. EDITORS—A friend of mine has already begun to cut potatoes for planting. He cuts them in small pieces, one or two eyes on a piece—spreads them so they can dry a little—then puts them together, and waits for planting time. I don't know whether it is a good way or not, but one thing I do know, that he has very good success in raising potatoes. He is an advocate for early digging. B. J. CAMPBELL. *Glen Haven, N. Y.*

A SIMPLE SEED DRILL.

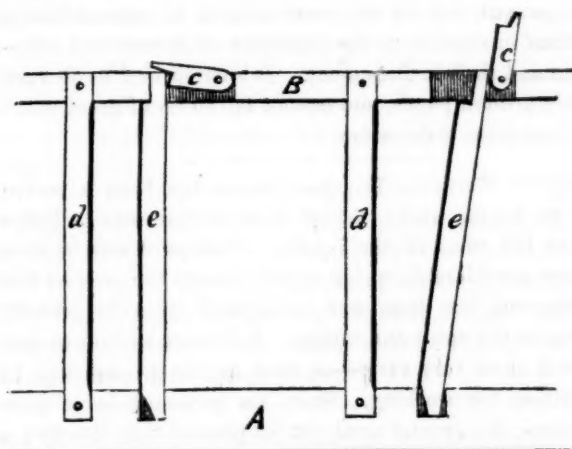
MESSRS. TUCKER & SON—I here send you a rough sketch of a seed drill of my own construction, which is well adapted for planting the seed of the French turnip, and by a slight change of the seed dropper, will do for beans, corn, and such like, and is so simple any one of common ingenuity can make one in five minutes. No. 6 represents the machine complete. No. 1 is a tin band one inch broad, with hopper and seed spout soldered to it. No. 2 is a wheel with two holes of a triangle shape placed directly opposite one other, which wheel fits accu-



rately in the tin band. No. 3 is an end view of driving wheel, shaft and dropping wheel. No. 4, strip of hoop iron screwed to side of No. 5, to form a fork for wheel to run between. Dimensions of driving wheel 12 inches; dropper 2 inches; length of handle $4\frac{1}{2}$ feet. The machine made of this size drops a hill of three seeds every eighteen inches, but it can be made to drop as often as desired. Be careful not to get the holes in the dropping wheel too large—three seeds is sufficient. When planting prepare the ground same as for corn—mark one way two feet apart, then run the drill through the mark.

Schenectady Co., N. Y.

N. J. CLUTE.



STANCHIONS FOR CATTLE.

MESSRS. EDITORS—I send you a sketch of stanchions differing from any I have seen in print, in having the movable slat so that it can be taken entirely out, making it very handy in case of oxen or steers with wide horns.

DESCRIPTION.—The sill A is 9 inches high and 7 inches wide. The mortices in it are $1\frac{1}{2}$ by 3 inches, and 4 inches deep. The horizontal top stick B. is 7 inches wide, and $3\frac{1}{2}$ inches deep, the bottom being $4\frac{1}{2}$ feet from the floor. The slats, d. and e., are $1\frac{1}{2}$ by $3\frac{1}{2}$ inches, round on the edge. The loose slat e. has the bottom end chamfered off where it goes into the mortice, so as not to bind when opening; the upper end has a shoulder of 1 inch on the inside edge, to keep it in place when shut. The mortice

in which the slat e. and latch e. work is 12 inches long, and the latch is $1\frac{1}{2}$ by 3 inches; the notch 2 inches. The loose slat can be taken entirely out of the lower mortice to accommodate cattle with large horns. The space between the stanchions to be boarded up. Width of space for the cattle's neck, 7 inches.

Saratoga Co., N. Y.

L. O.

PRUNING THE GRAPE.

I propose to plant a few grapevines this spring and had intended to have trained them on the renewal plan, until I read an article in the Gardener's Monthly for Jan., from Wm. Bright, in which he states that the renewal system (which he has so strongly advocated and practiced) is a failure.

I have taken this liberty to bother you with a few inquiries, (for I know of no one in whose opinion I have more confidence,) which I should be pleased to have answered through the columns of the next number of the Co. GENT.

Does Mr. Bright refer to glass or out-door culture, or both?

Is his opinion that of vine growers generally?

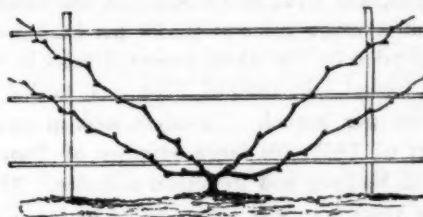
What is the short spur system?

What mode of training would you advise?

Fulton, N. Y.

H. THOMAS.

Bright terms his mode of training the dwarf renewal system. This does well for pot culture, or for the modification of pot culture in brick compartments—which is an excellent way of raising exotic grapes in houses, provided double or triple the usual amount of labor can be expended upon them. But it is entirely unfitted to out-door culture of American varieties. They will not bear such continued and severe cutting with so small an amount of growth. Perhaps some of the smaller and short jointed native sorts might succeed better than the Isabella, which we think will succeed best if subjected to some modification of fan training. The form very commonly adopted by many, of horizontal arms and upright canes, is more distorted from nature, and the upper part of the



Modification of Fan Training.

canes gets too much sap at the expense of the lower. The annexed figure of a young vine exhibits in substance something of the form proposed. The canes may be increased as it becomes older and may be cut back only part way to the central stem. Short spur pruning is where but a few inches are left of each shoot, instead of one to two or three feet.

PARING AND BURNING.

At one of the recent agricultural discussions at Boston, several of the speakers remarked on this subject. Mr. Howard thought paring and burning might be resorted to in some cases with advantage, particularly on clay soils. He cited instances within his observation, where great benefit had been derived from burning. Mr. Tower of Lanesborough, said that this process applied to swales containing considerable vegetable matter, was thought a good way to improve them. Mr. Hubbard of Sunderland, stated that some swampy grass land had been made to produce good grass by burning off the surface and then applying sand.



ALBANY, N. Y., MAY, 1863.

The preliminary arrangements were last week completed between the Executive Committee of the New York State Agricultural Society, and the citizens of UTICA, for the holding of the next State Fair at that place, Sept. 15-18, 1863.

In the Second Annual Report of the Trade and Commerce of the city of Albany, for the year 1862,—for which we are indebted to WM. LACY, Esq., Secretary of the Board of Trade, we note one fact to which the attention of our farmers should be directed. Albany has long been the great BARLEY mart of the country. In the Report of the Board of Trade for 1861 (which Mr. LACY also sends us,) it was stated that the receipts of Barley for that year at this point, were 2,596,700 bushels, of which less than 700,000 bushels were grown in the State of New York. In 1862 the crop in this State shows a still farther reduction: Out of 2,814,700 bushels received here, only about 500,000 were produced by our own farmers. Why should they abandon its culture thus largely to the Canadas, from which our largest quantities are imported? Thus last year there were received at Whitehall and Oswego, 1,659,000 bushels almost wholly the production of the two Provinces, against 662,000 which came mostly from the Western States, and about half a million bushels, as already stated, the growth of New-York. The question of increased attention to Barley culture is certainly worthy of agitation in this State, especially at present rates.

The aggregate quantity of Barley reported sold at Albany in 1862, was 1,737,400 bushels, of the value of \$2,024,217, an average price of \$1.16 per bushel—against an average price for the whole reported sales in 1861, of 68½c. per bushel,—in 1860 of 77¼c. per bushel, and in 1859 of 78c. per bushel. "Dealers look in vain," says the Report of 1861, for large supplies of Two Rowed Barley from Madison and Jefferson counties. The close of seasons years ago, was accompanied by large supplies of this description from those counties." Can any one enlighten us as to *why* this change has taken place? Is grain of other kinds grown to better advantage? Has the dairying interest driven out Barley raising? Or was it injudiciously grown year after year upon the same soils, until those soils became less productive, and farmers would not take the trouble to bring them "into heart" again, or to try it in other fields?

California, it appears, has reached a point at which Australia found herself at one time, as regards the production of Cattle. They have increased to a number beyond the wants of the State. A convention of Stock Raisers was held lately at San Francisco, to recommend some plan of relief, and a committee appointed on the subject submitted the following suggestions: After estimating the number of Cattle in the State of California at 1,800,000, producing an annual increase of 600,000 head, they state that the consumption, as near as it can be ascertained, is only about 400,000 head, and that there is thus an annual surplus of one-half more than the con-

sumption; and the only way of avoiding a continuance of such a surplus, being the reduction of the number of Cattle kept, they urge

"The establishing of metanzas in the various counties, for the purpose of slaughtering a certain (say thirty-three) per centage of all the brood cattle of the age of three (3) years and upwards, for their hides and tallow, and such other portions of the bullock as may command a market.

"Secondly, the spaying for two or three successive seasons, an equal per centage of all brood stock under the age of three (3) years—or what will bring the same result, the castration of all, or at least a very large portion of the inferior bulls."

The committee submitted for the information of the convention, the following facts in relation to the slaughtering of cattle (in best condition) for hides and tallow:

Each bullock will yield on an average, one hundred (100) lbs. of tallow, worth in this market 7 cents per pound,	\$7.00
Average weight of hides, 27 pounds, at 15 cents,	4.05
Tongue, dried beef, horns, and brush, say,	2.00
	\$13.05
Deduct expenses of slaughtering, packing, &c.,	2.50
Total nett,	\$10.55

"About 75 per cent. more than the rancheros realized for their beef cattle the past season, which is estimated not to have exceeded \$6 per head."


If shipped to New-York, it is calculated that the returns would be enough larger than when tallow, hide, &c., are sold in California, to net a somewhat larger return, and "there are beside portions of the beef which could be profitably salted."

The convention was to meet again Feb. 11th, and in the interval efforts were to be made to secure the formation of a Joint Stock company, which should undertake the erection of the "Metanzas" in different counties. Of this second meeting we can find no report in our exchanges.

BLISS' NEW CATALOGUE.—B. K. Bliss' new catalogue of seeds, (Springfield, Mass.,) which has just appeared, is not only a model of its kind, for neatness and order of arrangement, but for the great amount of information it contains in relation to the character of flowers and vegetables and their management. It is comprised in 84 very closely printed pages, and cannot fail to be of great value to all amateur cultivators.

SPRING WHEAT.—The past winter has been a severe one on winter wheat, though it is yet too early to judge of the full effect of the injury. Perhaps it will be wise to sow considerable spring wheat, though the product last season was less than was anticipated from its growth, owing to the aphid and midge. It is more certain to succeed if sown very early—as soon as the ground is in fit condition for working. Sown on corn-stubble or after potatoes, the ground need not be plowed very deeply; a gang-plow is sufficient for the work. Good soil, with good seed and plenty of it—more we think than has usually been sown—will be likely to secure a good crop. If the soil is not sufficiently rich, a light dressing of well rotted compost, or of old leached ashes harrowed in with the seed, will give the needed stimulant.


LARGE HOG.—The biggest hog probably in the United States, was recently exhibited in one of the Boston markets. It was of the Leicester breed, raised at Amherst, N. H., and was fattened and slaughtered by L. B. Morse. Its live weight was 1,330 pounds—weight dressed 1,180 pounds. It was 2 years and 11 months old, and reached the size of an ox.

 In commenting on the prevalent reluctance among our farmers to enter upon **ROOT CULTURE** upon a scale at all commensurate with its importance, in the idea that "it may be suited to the climate of Great Britain, but won't pay here," we have often referred to the fact that the farmers of Canada make no such objections, and are doing more in this line than we are. A correspondent at Port Hope, C. W., sends to the **COUNTRY GENTLEMAN** some interesting figures as to the Turnip Crop of Canada. He says:—

"According to the Census of 1851, there were over three million bushels of turnips grown in Upper Canada, and about 182 bushels was the average yield per acre. In the year 1861, according to the census of that year, the turnip crop had increased to over eighteen million bushels; the average per acre had increased to 248 bushels. Although this is but a low average, it is a great improvement in ten years, and probably the average per acre will be doubled by the next census. Turnips are not very extensively grown in Upper Canada, being chiefly confined to a few of the central counties, and from two to ten acres is about the extent of their culture on each farm, and but few exceeding ten acres. The turnip crop leaves the land in fine condition for future crops, being an excellent fallow for spring wheat or barley, and brought round in a seven years' course of cropping, the land will be improved, getting one good dressing of manure on every turnip crop. On farms where this system is carried out, all the straw and hay will be manufactured into rich manure."


It may appear "not very large" to an English farmer, to speak of "from two to ten acres of roots" on a farm, but it seems considerable here, where so many consider half an acre as an undertaking too formidable to be encountered, and where the census returns of Agricultural products do not even mention "Roots" collectively, let alone the humble turnip by itself. Our correspondent's hints as to the rotation to be employed are interesting, and we should be glad if he would write us a fuller account of the system of farming adopted by the most successful farmers of his district.

We have nowhere seen the returns of the last Canadian census (1861.) If any abridged summary has been published by the government, easily obtainable for the public, we should feel greatly indebted to any friend who can send us a copy.

 A Meeting of Wool Growers was held April 2d, at Rochester, at which representatives were present from the counties of Monroe, Genesee, Livingston, Steuben, Wayne, Wyoming, Orleans and Ontario. Hon. ELISHA HARMON of Monroe, was chosen to preside, and Messrs. A. McPHERSON of Genesee, and D. D. T. MOORE of the Rural New-Yorker, to act as Secretaries. The chief subject of discussion was the practice of washing sheep—the debate on which is said to have been very animated and interesting, both sides of the question having warm advocates. The division of opinion was such that no vote was taken upon the resolution offered in condemnation of the practice; and no decided expression of sentiment was therefore arrived at, either *pro* or *con*. A resolution was, however, adopted, appointing a committee of one for each county in Western New-York, to ascertain the views of wool growers at home, and report the names or number of those who do and do not wash their sheep, for publication hereafter. Another committee was appointed to confer with manufacturers, to ascertain what difference they would make in the prices paid for washed and unwashed wool. And it was unanimously resolved, that whether

sheep are washed or not, purchasers of wool ought to discriminate more strictly between the qualities and condition of what they buy, instead of striking an average and offering "a premium for slovenliness if not dishonesty," by the payment of "nearly or quite as much for poorly put up wool of inferior quality, with dirt and tags included, as they do for a clean, well-prepared, fine staple."


Another Wool Growers' Meeting took place at Cleveland, Ohio, April 15th, at which Hon. R. M. MONTGOMERY of Mahoning was chairman, and Wm. F. GREER of Lake, Secretary. Three questions came up for debate, the weight of opinion with regard to two of which is officially reported as having been—"1st. It is highly desirable for wool-growers to dispense with washing sheep, and they are determined to do so as soon as they can secure from the manufacturers a just system of discount for the difference between washed and unwashed wool.—2d. The actual difference between wool shorn without washing and that washed in the usual way, ranks from 10 to 20 per cent., according to the style of the sheep and thoroughness of washing." On the third question, "the best method of marketing wool," no conclusion appears to have been attained. A resolution was reported giving the argument against the washing of Wool in detail, which was *passed*, each proposition being considered separately and adopted by a unanimous vote. The other proceedings were similar to those in the Rochester meeting. A resolution was passed urging the better support of the Ohio Farmer, and the convention adjourned to meet again on the 2d day of the State Fair at Cleveland, in September next.

 We have received the following letter from Hon. ISAAC NEWTON, Commissioner of the Department of Agriculture, under date of Washington, April 11th, 1863:—

"MESSRS. LUTHER TUCKER & SON—By this mail I forward to you a package of Garden Seeds, being a part of those distributed through the country from this Department, and which I think are such as come within the intent of the act creating this Department. They are certainly sought for most eagerly by the people of the country. It is my intention to distribute the seeds hereafter, as far as possible, through Agricultural Societies and Clubs.

"I hope these will be generally organized through the country, and I particularly request that every such organization now existing or which may be formed, should at once forward to this Department the name of its President and Secretary, that they may be promptly supplied with seeds and the Agricultural Reports; and you will confer a favor by calling attention to this through your paper."

The officers of all Agricultural associations, whether Societies or Farmers' Clubs, will thus enable the Department of Agriculture to secure a complete record of existing institutions of the kind throughout the country, and at the same time advance their own interests, by forwarding promptly to the Commissioner of the Department, the style of the organization and the names and post-office addresses of its President and Secretary. And we may suggest that a table of these organizations and their officers for the current year, would be a very valuable feature in the annual reports of the Bureau, occupying but little space in proportion to its importance to the agricultural community.

 The NEW-JERSEY STATE AG. SOCIETY will hold its next Fair in the grounds of the Passaic Co. Society at Patterson, Sept. 8, 9 and 10.

Inquiries and Answers.

DESTROYING MINT.—How can I destroy the patches of Brook mint, growing in a meadow that I don't want to plow? *E. J. Rockland Co., N. Y.* [Have any of our readers succeeded with any other mode than smothering by plowing or spading under? Draining the land would doubtless be useful; and keeping mowed very short would serve to admit the extension of the adjacent grass.]

STONE MILK PANS.—I notice in *THE CULTIVATOR* for Sept. 1861, your mention of Stone Ware Milk Pans, manufactured in Ohio. Can you give me any information about them—whether they will answer in a spring house, to stand in water? I am afraid of small cracks and sour milk. If you can give me any information or advice, or refer me to one who has had experience, it will greatly oblige me. Tin milk pans rust very soon in a spring house. I am about building a new dairy house, and any information on the subject will be very acceptable. No one in this part of the country uses water for this purpose. *H. S. COLLINS. Collinsville, Conn.* [We shall be pleased to hear from any one who has had experience in the use of these stone milk pans; and also to receive any hints on the construction of Dairy houses which may be of use to our correspondent.]

MILCH COWS.—I want the *best cow* I can get, for milk and cream—one that will give the *richest* kind of milk, and a respectable quantity—one too that will give milk for a good portion of the year, for we poor villagers have to be content with a one-cow dairy. Must have such an one. From all I can learn, I suppose the right kind of an Ayrshire would be best for me. May I ask your opinion in regard to this, and also to inform me, if you can, where *just the right one* of this breed can be had? *D. W. F. Mohawk, N. Y.* [Such a cow as our correspondent wants—one combining all the good qualities he desires—is but rarely found. For richness of milk, the Alderney undoubtedly ranks first,—but in quantity falls behind the best Ayrshires. You can procure Alderneys of F. M. Rotch, Esq., Morris, Otsego Co., N. Y., or Dr. H. Wendell of this city, and Ayrshires of Brodie, Campbell & Co., New York Mills, Oneida Co., or H. H. Peters, Southboro, Mass.]

LUCERNE.—A subscriber at Philadelphia, wishes for information in relation to the culture and value of Lucerne. So far as we know, it has not done well in this country. If any one has found its culture worth continuance, we shall be pleased to hear from him.

COUGH IN SHEEP.—I have three or four valuable Cotswold sheep that are troubled with a hard cough, which has affected them a length of time. It seems to be upon the lungs, as it sounds very harsh and dry; one of them, a buck lamb, has had it nearly all winter, and now is very poor, and his wool starts when it is pulled. Their appetites are good as ever. They are confined in a shed which opens to the south, with a number of others which I am fattening. They have clover hay three times a day, with a feed of carrots in the morning and oats at night, with free access to running water. The cough does not appear to be contagious, but appears to be confined to these few cases, and I know of no reason why these should have it, as there is no opening for the wind to pass through. I have tried tarring the nose, giving sulphur, etc., but it gives no relief. If you or any of your readers know of any remedy, I should be happy to hear of one. *A SUBSCRIBER. Montpelier, Vt.* [Will some of our sheep-raisers who are familiar with sheep diseases please answer.]

OSAGE HEDGE.—Through the columns of your valuable paper, I wish to make some inquiry concerning Osage Orange Plants. Which are the best to plant for a hedge, one or two year old plants—how far apart do you place them, and when is the best time to set them? *C. C. H.* [One year plants do

well, and are most easily set out; two year plants will make a hedge a little sooner, but require more labor in setting. The distance asunder is usually 6 or 8 inches, but many think a double or triple distance better by affording more room for the roots of each plant, the required thickness of hedge being obtained by freely cutting back, and a consequent thick growth of horizontal branches. The best time is in spring as soon as the buds have swollen enough to show that the plants are alive and vigorous.]

PLOWING IN CLOVER.—Please state the best time to break up clover land for wheat, that has been pastured two years, and the right depth to plow. *N. E. Sanford, Ind.* [Turn the clover deeply over in summer, covering it well by assistance of a weed-hook or chain attached before the plow. Before sowing the wheat, cultivate the top of the sod thoroughly with a two-horse cultivator or Shares' harrow.]

DISSOLVING BONES.—Will you be so kind as to state through *THE CULTIVATOR*, the *best possible mode* of making a bone phosphate, by dissolving the ground or crushed bone by means of vitriol, quantity and proportion of the several matters, to form a ton of phosphates, or pit, as I desire to prepare several tons for my corn crop, as early as possible. *JOHN W. ANDERSON.* [Sulphuric acid will not dissolve bones well, unless they are previously ground to powder. If the bones are whole, or cracked into fragments, it will require months for the acid to dissolve every part, and even then the operation will be imperfectly performed. After the bones are ground there are two modes. One is to place the bone dust in a heap on a wood floor, wet it by means of say half its weight of water, and then add gradually, as it is stirred over, nearly as much sulphuric acid, stirring frequently for several days. The other mode is to place the dust in a cask or tub, wet it by adding a rather larger portion of water, or nearly its own weight, as the cask will hold it, stir it well, and then add, by weight, nearly half the weight of the bones in sulphuric acid. Stir rapidly, and when thoroughly mixed pour out the mixture on the floor, and prepare another portion, adding it in turn to the heap. Let it remain some days, till all parts are intimately combined. Being of the nature of a paste, it must be rendered dry enough for spreading by mixing with it some dry powder, as dried peat, pulverized charcoal, coal ashes, &c., but no alkaline substance as wood ashes, lime, &c. The sulphuric acid costs some two cents per pound in large quantities, and it is doubtful whether the benefit derived from this manure would pay its cost for most crops.]

PASTURING SHEEP.—E. S. asks in No. 12, vol. xxi, *CO. GENT.*, "how much should be charged for pasturing sheep, when cows can be kept for fifteen cents per week." My experience is, Saxon and Merino, one and three-fourth cents; Long-wooled more. *D. B. W.*

SHEEP EATING THEIR WOOL.—I wish to inquire of you or your readers a remedy for sheep eating their wool? I have a flock of nice Cotswold sheep, a part of which I have kept a number of years. They have not only eaten from themselves, but from each other. At first I supposed it was caused by ticks, but on examination I found it was not so. Their food most of the time is clover, cut early and well cured, with turnips daily. I cut the hay with a common hay cutter, as they do not waste it as they do when fed to them long. Salt is kept by them, which they eat very eagerly,—also pounded bone, which they do not eat. An answer to the above question will oblige me and possibly many others. *M. M. C. Worcester, Mass.*

POULTRY.—My Black Spanish chickens pick the feathers off one another's necks and breasts every spring. What is the cause of it, and how can it be prevented? *A. H.* [Will some of our poultry-keepers answer?]

COAL TAR.—Is coal tar suitable to use to repel flies after docking and castrating lambs? *R. B. C.*

COUGH IN SHEEP, &c.—What will cure the dry cough we so often have in sheep? Is millet or Hungarian hay good for sheep? Some claim that it will kill horses and cattle. Do you or any of your correspondents know what effect it has on sheep? Will Theodore Smith or some one else give us the average weight of fleece of the Nankin sheep.

Hickory Farm, Ill.

S. H. W.

SHEEP EATING THEIR WOOL.—M. M. C. inquires how to stop it. I noticed one day that mine were eating little locks which had caught on the rack. The thought struck me that some natural food was needed, which they had not access to. I immediately cut some apple tree, hemlock boughs, &c., and threw in for them to browse on, which they did with avidity, since which I have seen no more eating wool. B. Conn.

MARL.—I would like to inquire through THE CULTIVATOR, what is the name and qualities of the enclosed substance, (of which there is a bed on my farm,) and if it is valuable, how to use it? The farm is mostly a loam with a strip of clay, and one side is the flats of the River Rasin, having sink holes or ponds which contain vegetable matters to a depth of a foot or more—are easily drained, and are supplied with water from springs which flow out from muck-beds resting on bog lime, on the side of the bluff. Would this bog lime when burned, be good to use in the same manner as stone lime? J. C. L. Adrian, Mich. [The substance sent us is marl, and it appears to be nearly pure carbonate of lime, as it almost wholly dissolves with strong effervescence, in dilute muriatic acid. It would probably be valuable as a dressing to land, like air-slacked lime, in all cases where the latter proves beneficial. If burned, it would probably furnish good lime.]

SEEDING.—I have a piece of woodland that I wish to get into a pasture as soon as I can. I am cutting the wood off this winter. I wish to know the best and quickest way to make a pasture of it. How will it do to harrow the surface and sow hay seed and grain—and if so, which and what kinds are the best to sow? A READER. [We could advise more definitely if we knew the character of the land, but we suppose it to be of medium dryness. Moist or natural meadow land will often become covered with a spontaneous growth of grass in one or two years after the wood is cut entirely off and brush cleared away; but the growth may be hastened in any case, by harrowing and sowing grass seed. Sometimes such new lands have given excellent grain-crops, by harrowing alone, and it might be seeded down with the grain. Timothy and clover are usually preferred on upland, and timothy and red top for moist land.]

BARLEY AND OATS.—How can I separate barley from oats for seed, they being mixed? [There are several new fans or "separators" that effect this purpose; Nutting's is one of the best, but we believe is not now manufactured or sold anywhere. We cannot at present furnish the names of the others.]

FOUNDER, &c.—I have a young Canadian horse, 6 years old, which had been a little chest foundered some time before I had him. I have had him three weeks—1st, I wish to know if he can be cured, and how, or if he can be helped—if his grain does him as much good as before he was injured—if his wind is as good, and if he can be fattened any? A READER. [For a full statement of the management and treatment of founder, occupying several pages, see Dadd's Horse Doctor, page 256.]

WRAPPING SCIONS TO SEND BY MAIL.—Can you give in your paper, "the how" to prepare any kind of paper having a good body, for enclosing scions, roots, plants, seeds, &c., as a substitute for oiled silk? An answer will be interesting to thousands. B. [Oiled silk is commonly used only because it is most conveniently applied—running a thread around it from one end to the other readily forming a water-tight casing. Paper coated or varnished with grafting wax answers the same purpose. The wax may be brushed

over in a melted state before the paper is used or after the wrapping is performed. There may be various thick varnishes to answer the same purpose, the only object being to form a case through which the moisture cannot escape.]

MANURE FOR TOBACCO.—What would be the best substitute for barn-yard manure to apply to tobacco? What is the relative value of barn-yard manure and ground bones? c. [In the absence of common manure, apply any other substance containing similar ingredients, as poudrette, guano, &c. It is hard to estimate the comparative value of bones in their practical effect, as like most special manures, they are uncertain, sometimes producing conspicuous results, and others hardly perceptible. Their value according to analysis is several times greater than that of yard manure; both bone and manure varying considerably in their composition.]

THE HORSE.—As no one has answered the inquiries of "A Subscriber," p. 192, I will try it. If galls are greased before they commence to heal, the hair will come of the natural color; otherwise they will be white. I know of no way to restore the color except to create a new sore, and then grease it before the hair starts. This may be done by rubbing blister salve on to the spot. The horse should be so tied that he cannot gnaw it and get the salve in his mouth. To reduce the lampas, it is not necessary to lance or burn them. If fed one feed per day of corn on the cob, the swelling will subside in a few days. Perhaps the horse is wormy, which causes him to rub his tail. A feed of rye bran will often physic or loosen the bowels and carry off large quantities of worms. As a wash for the tail, use a shampoo composed of aqua ammonia, borax, and water. Any barber will give you the proportions. B. Conn.

COAL TAR.—R. R. C. inquires if coal tar is suitable to use on sheep to repel flies. I do not know; but I do know that molasses is a safe and simple remedy. It will prevent fly blows, kill maggots, and heal up a wound on any animal very quick. It is excellent to use on wounds of sheep when bitten by dogs, which is generally done in the months of August and September. Nothing is necessary at this season of the year. Mine are already all castrated, and the ewes all docked and doing well. Castration should be performed the first fair morning after the lambs are three days old. Valuable instructions may be found in the Patent Office Report for 1861. n. Conn.

POULTRY pick feathers off each other's necks for the purpose of getting the blood contained in the end of the quill. A plenty of chopped fresh meat fed to them will stop it at once. B. Conn.

MORGAN'S IMPROVED HARROW.

MESSRS. EDITORS.—One year ago I got a patent harrow from John E. Morgan of Deerfield, in this State, which is a wonderful improvement on any harrow I have ever used. I introduced the Scotch double harrow here some 40 years ago, but these made by Mr. Morgan will do double the work in the same time and do it better, and not any harder work for the team. The Morgan harrow will work the land better in going once over, than my other harrows do in going twice over; and if a farmer can save a man a pair of horses for other purposes when harrowing, it is considerable in these times. For all farmers occupying stiff soils like mine, I know they will give entire satisfaction.

We have very stormy weather; the ground covered with snow. Considerable plowing was done in January, in this section, but none since, and the prospect for plowing is very unfavorable at present.

I notice by the North British Agriculturist, that they were busy sowing wheat and other grain in February. If we could only do so we would require fewer men and horses. JOHN JOHNSTON. Near Geneva, April 8.

Ten Years' Importation of Flax Seed and Oil.

YEAR ENDING 30TH JUNE.	Quantity of foreign Linseed imported into this country in each year.	Total value of same at place of export- ation. (52 lbs. per bushel.)	Quantity of foreign Linseed Oil im- ported into this country in each year.	Total value of same at place of export- ation.	Total consumption of Foreign Lin- seed after reduc- ing oil to its equi- valent of seed—2½ gallons per bush.	Range of prices of East India Lin- seed in each year. (52 lbs. per bush.)	Range of prices of American Flax- seed in each year, for Sept. to Dec. inclusive. (50 lbs. per bush.)
	Bushels.		Gallons.		Bushels.		
1851,	602,074	\$430,017	2,818,344	\$1,632,811	1,809,935		\$1.25 @ 1.35
1852,	855,007	589,749	1,583,012	779,054	1,533,411	\$1.30 @ 1.75	1.30 1.50
1853,	867,580	633,395	1,912,523	1,045,897	1,687,233	1.45 1.80	1.25 1.45
1854,	1,111,721	928,140	1,456,611	775,058	1,735,983	1.60 2.05	1.45 1.70
1855,	1,102,545	1,009,381	1,243,035	776,097	1,635,274	1.90 2.30	1.75 2.10
1856,	1,696,294	1,741,260	1,712,208	1,063,771	2,430,099	1.85 2.40	1.70 2.25
1857,	2,730,359	3,003,824	1,465,865	958,200	3,344,301	1.25 2.10	1.35 1.12½
	Estimated.				Estimated.		
1858,	2,948,000	3,243,174	282,842	164,757	3,069,218	1.32½ 2.00	1.19 1.50
1859,	2,900,000	2,415,243	1,210,697	635,172	3,418,870	1.52½ 1.70	1.25 1.35
1860,	3,310,000	2,753,411	576,435	402,908	3,557,070	1.56 1.80	1.30 1.45
1861,	2,490,000	2,073,750	186,347	123,538	2,568,433	1.45 2.30	1.25 1.60

IMPORTATION OF FLAX SEED AND OIL.

EDITORS COUNTRY GENTLEMAN—In accordance with my promise, I send herewith a tabulated statement of the importations of Linseed and its product in the form of oil, from 1851 to 1861 inclusive. (See table above.) Also the prices for each year except that of E. I. seed for the first.

The quantities and values are taken from the "Statistics of Commerce and Navigation," published by the U. S. Treasury Department, the respective years ending 30th June.

The quantities of seed from 1858 down, are not given in the reports, and I have consequently made the best estimates I could from accessible sources of information.

The prices of foreign seed are from the files of the "N. Y. Shipping List," and give the extreme range of prices from Jan. to Jan. in each year.

The prices of American seed are derived from crushers in this vicinity, and are for Sept. to Dec. of each year, that being the season in which most of the seed has been sold.

The difference in price between American and foreign seed, at the same season, has ranged from ten to forty cents in favor of the latter, but has generally been from twenty to thirty cents. In some few cases, as in the fall of 1857, the prices have been pretty nearly even.

The quotations of American seed in the New-York market, have been very irregular and inconstant, resulting from the fact that the crushers in the interior have taken pretty nearly the whole quantity, leaving but little to seek in that market.

I am happy to learn from all quarters, that a very large breadth of flax will be grown this year, and will probably be limited only by the scarcity of suitable seed.

Lansingburgh, April 15, 1863.

A. E. POWERS.

TO SAVE RENNET.

It is now decided by the best judges, that the calf should be taken from the cow sixteen to eighteen hours before killing it. When the rennet is taken out remove the straws, if there be any, and fill it with salt; never wash it in the least, inside nor out. Place a layer of salt on the bottom of a large stone jar that can be covered closely; then put in the rennet, add another layer of salt, and so on until the jar is full. Be sure and have so much salt that there will be no brine. Cover the jar tight, and set it in a cool place. When wanted for use, make a strong brine, (the brine should be about as warm as new milk just from the cow,) throw in a few sprigs of sage, and allow one gallon of brine for two rennets; they should be put in soak four days before needed for use. When soak-

ed two days, they should be turned wrong side out, and thoroughly rubbed.

A teacup two-thirds full of the liquor, where two rennets have been soaked, should bring one milking of thirty cows; but be sure and use rennet enough to bring the milk the first time—better have a little too much than not enough. If you get in a little too much, it will not hurt the cheese in the least if it is sweet, as it will work off in the whey. Never soak rennet in sweet whey, for it has a tendency to sour the curd. Never use a drop of rennet but what is perfectly sweet. Soak the rennet in a stone jar, cover tight, and set in a cool place. Mrs. E. D. CALL.

GAS TAR FOR SEED CORN.

EDITORS COUNTRY GENT.—One of your subscribers asks for information in regard to the use of "Gas tar" for seed corn. I have used it for about 15 years, and find it very good in preventing the birds from taking it up. I have sometimes found it pulled up, but not taken from the plant. As for "gophers," I do not know whether it would be a preventive in their case or not, as we have no such "varmints" in our country.

About 3 gills to the bushel is sufficient for a coating. If it is put on too thick, it will prevent the moisture from entering the grain, and hence it will be a long time in germinating. By mixing small quantities at a time, it is coated more easily. G. Woodbury.

A correspondent wishes to know how to put gas tar on seed corn. I will tell him how I do it, and the reasons why. Soak the corn in warm water at least twenty-four hours; now split a grain open, and if there is any dry spot in it, let it soak till it appears moist inside. Now pour the corn out into a basket to drain; let it stand there, stirring occasionally, till you can see that the root is ready to come out; it will show a slight protuberance on the grain. Now spread the corn on a floor or boards, (a stable door taken off answers a good purpose.) Warm the tar enough to make it thin, pour it over the corn (as you would pour molasses on a fritter when you don't want much on,) stir the corn with a stick until every grain is coated with tar, and the grains assume a grey appearance. If you put too much tar on they will stick together; sprinkle on plaster or ashes—plaster is best, ashes being so near the color of the ground, makes it difficult to see the corn when dropped on the ground. Now throw the whole mass into a sand riddle, and sift out all the loose plaster, and you are ready to plant.

No bird or domestic fowl will disturb it; can't tell about gophers, mice or squirrels. Soaking the corn is very essential, as there must be moisture enough in the grain to sprout it, for the tar prevents any moisture from the earth. I have sometimes let it remain after being tarred, until the roots were half an inch long without injury, but if the sprout comes out, it is very tender and will break. W. D. SUGAR. Chester Co., Pa.

THE SUBSCRIBER WOULD LIKE TO CON-

TRACT with any party or parties for the Manufacture and Sale in the State of New-York of **BULLARD'S IMPROVED PATENT HAY SPREADER AND TURNER**, patented May 21, 1861.

April 16—w2mtt.

SAMUEL HARRINGTON,
New-Braintree, Mass.**PREMIUM CHESTER COUNTY WHITES.—**

THOMAS WOOD,
Penningtonville, Chester Co., Pa.,

Continues to ship to any part of the Union these celebrated **HOGS** in pairs not akin, at reasonable terms. April 16—w&mtl.

ALL ABOUT FLAX CULTURE.—
A GOOD, USEFUL AND TIMELY

WORK ON FLAX CULTURE, will be issued on the 20th of April, 1863—with all requisite information relative to preparing the ground, sowing the seed, culture, harvesting, &c., &c. It is mainly by men of long experience in Flax Growing, who know WHEREOF THEY AFFIRM, and how to impart their knowledge. The aim is to furnish a COMPLETE AND

PRACTICAL MANUAL OF FLAX CULTURE, such a work as will enable new beginners to grow Flax successfully, on the first trial.

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Feb. 5—w13tm3t.

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Beware of spurious imitations, put up in barrels to resemble this Company's brand.

Attention is called to the following letter from a farmer:
FARMINGTON, N. H., October 9, 1862.

JAMES R. DEY, Esq., President Lodi Manufacturing Co.
For several years past I have used as a fertilizer, the Lodi Manufacturing Co.'s Poudrette. I commenced in 1859. I then had a tenant carrying on my farm upon shares. He agreed to use such artificial means as I should furnish free of expense to him, but he had but little faith in anything but barn-yard manure. I purchased some Poudrette. He took it from the freight house; opened it; came to me with eyes wide open, and said: "YOU HAVE GOT CHEATED; THIS STUFF IS NOTHING BUT DIRT." I told him, "I supposed I had; it was nothing new; I was in the habit of getting cheated, but as it cost him nothing, I wanted him to use it."

We had a piece of poor, sandy loam land, which he planted with potatoes, without manure. He put Poudrette in the hills eight rows, then omitted eight rows, and then put lime in the hill, as he had a mind to try that.

The result was, that where the Poudrette was put the potatoes came up three or four days before the others. The tops were twice the size during the season, and at harvesting we measured two lots of each, one of which the Poudrette gave twice the quantity of potatoes, and the other in the proportion of five to three.

The lime had no perceptible effect.

We had a piece of corn land, sandy loam, (my tillage land is sandy and gravelly loam.) the corn had a liberal dressing, say ten cords of barn dung to the acre, spread upon grass land, a part plowed in the fall before, the balance in the spring. The tenant prepared a compost to put in the hill, a mixture of night soil, hog manure and loam well mixed, several times shovelled over, and well incorporated together. This was put in the hill. In eight rows through the middle of the piece, this was omitted and Poudrette was substituted instead. The result was the Poudrette brought the corn up sooner, of a better color, and at the end of two weeks after it came up, nearly twice as large, and it maintained it a head and shoulder above the other during the season. At harvesting we measured the corn, and where we got five bushels with the compost, we had six bushels with the Poudrette.

This satisfied me, and convinced my unbelieving tenant that it was something besides dirt. I have used it with whatever I plant ever since, and shall continue to do so, as long as it maintains its character, and is furnished at reasonable prices. We sometimes think we save an entire crop of corn by the use of Poudrette, in case of early frost, as it brings the crop to maturity at least a week earlier.

There has been an increasing demand here since it has been introduced, and from my own observation, and the information of others, I think it does as well on upland soils as on sandy loam. I have not been so particular since my first experiment, but every year I left a few rows, so as to be sure that it maintains its character. The present year there is a very marked difference in the appearance of a few rows left without the Poudrette, in a piece of corn not yet harvested. The appearance of your Poudrette to one not accustomed to it, is not very flattering. I will relate an anecdote on this point. In 1860 I prevailed upon a neighbor to try a couple of barrels, for which, I think, he paid me \$4.20. He informed me afterwards that he took it into his field all alone, and opened it; said he, I said to myself, if some one will come along and give me a dollar, he shall have both barrels. No one coming along, he tried it, and has used it every season since, and thinks very highly of its fertilizing qualities. Some of my neighbors have said to me, that they thought it had been worth to them \$5 per barrel. I have used other fertilizers, such as Guano, Superphosphate, &c., most of which are beneficial, but none come fairly up to the Poudrette. One particular advantage Poudrette has over other fertilizers is, that the smell is not offensive, and it will not kill the seed.

And again, it is not so expensive. My method is to put it in the hill with the seed. A quart by measure is ample for ten hills, at which rate a barrel will manure a thousand hills. I have known it to do well when a less quantity was used. I think nothing else should be put with it. It is a light matter to put it in the hill with the hand, as a person can drop it faster than a boy can drop corn. And it does not require the large hole necessary to put in dung or compost, and is a protection against the wire worm.

Respectfully yours,

GEO. L. WHITEHOUSE,
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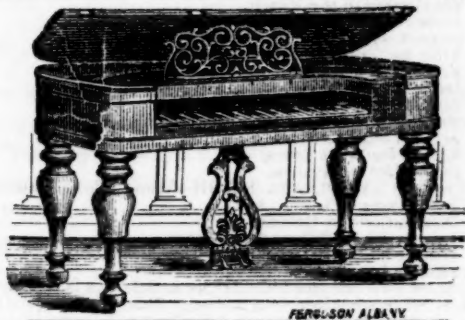
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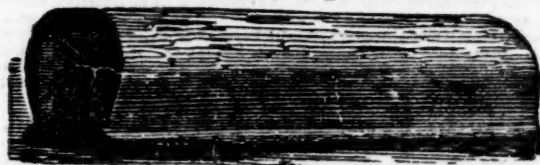
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This Periodical enters upon its thirtieth year, with 1863. It is now made up from the COUNTRY GENTLEMAN—those articles being particularly selected which shall present in each number the greatest variety of brief practical hints and suggestions, calculated to be of the widest interest and most general utility. It has long been the belief of the Editors that what one farmer has done another can do—hence their aim is to transcribe, either themselves or through their correspondents, the exact systems which the best and most successful of our farmers are now practically following, by which they have made money and enriched their soils—to explain the modus operandi, and set others in the way of following the example. We may assert without exaggeration, that it contains scarcely a page, from January to December, on which may not be found some Fact from the Actual Practice of the writer, of far greater real value to the careful reader than the year's subscription.

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